GENERAL DICTIONARY

OF

HUSBANDRY,
PLANTING, GARDENING,

AND THE

Vegetable Part of the Materia Medica;

WITH THE

Description, Use, and Medicinal Virtues

OF THE SEVERAL

HERBS, FLOWERS, ROOTS, &c.

Selested from the Best Authorities,

BY THE

EDITORS of the FARMER'S MAGAZINE.

VOLUME II.

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HUSBANDRY

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MACCAW TREE. See PALM.

MAD APPLE See Apple

MAD APPLE. Ses AFFLE.
MADDER, [Rubia.] This is the
English name of a plant cultivated with great advantage in feveral parts of Europe, and lately in England, being a very capital ingredient in the dying bu-finess. There are several species of madder, all of which afford a dye. M. Guettard, of the Royal Academy of Sciences, has experienced that the ladies bed-straw, or cheese-rennet, [gallium] may be made to yield one; and of this kind is probably the Ray-dechaye, which is used on the coast of Coromandel for dying red. M. Dambourney has not, indeed, as M. Duhamel remarks, hitherto been able to extract a good colour from the gallium : but there yet remains room to hope that he may be more successful in the future experiments which he intends to make on this root.

Mr. Ray mentions and describes four different kinds of gallium or mollugo, bastard madder, which, after the laudable example of our enterprizing neighbours, should likewise afford matter of experiment to those who wish well to this country, and particularly to our

dyers.
The azala or izari of Smyrna, perhaps more properly written hazala or lizary (according to the eastern method of pronunciation) which is the fort used by the French dyers at Darnetal and Aubenas, to give cotton that fine carnation colour for which Adrianople is famed, is a true madder. Some species of it grow naturally under hedges and in woods; and the roots of these, when earefully dried, yield as fine a dye as the azala of Smyrna. M. Dambourney has cultivated a species of madder which was found growing wild on the rocks of Oiffel in Normandy, and the roots of this plant have yielded him as

beautiful a dye as the azala of the eaft. Mr. Ray describes particularly a wild madder which grows only on St. Vincent's rock near Bristol, but also on the rocks about Biddesord in Devonshire, and in great plenty among the hedges almost all over that county. As Mr. Ray calls this the Rubia spleestric Monspessional major, and as M. Duhamel suspects M. Dambourney's Oissel madder to be that very species, it surely is a matter of great importance to this nation, and well worth the attention of patriots, to follow M. Dambourney's example in making proper trials of it.

The species most commonly cultivated is the Rubia tinctorum fativa, commonly known among us by the general name of madder. It is of this species that the plantations of madder are made in Zealand, and in the neighbourhood of Lisle.

The root of madder is a capital drug used in dying wool, linen, and cotton; and is indifpenfibly requifite in printing linen and cotton, being the only red dye in general use for that purpose. It was, at the time when the Society. for the encouragement of Arts, &c. first engaged in the encouragement of it, wholly imported from Holland: though it had formerly been a staple. article of produce in our own country We pay annually for this root to the Dutch an exceeding great fum; not less, according to calculation, than near three hundred thousand pounds; and, what is still worse, taking the advan-tage of the necessity we are under to purchase it of them, they have not only advanced the price to an exorbitant rate; but adulterate and fophisticate the madder in fo bad a manner, as lays our manufactures, in which it is used, under the greatest difficulties. These manufactures moreover, in which it is absolutely necessary, are of the ut nost importance,

importance to us; particularly the printing linen and cotton; which furnishes employment to fome thousands of our women and youth, who would otherwise be waste hands, and many of them burthensome to the public. Nothing, therefore, could be more worthy the regard of the society, than the introduction of the culture of madder here; which may tend to the national good so many different ways.

There was however, at first, an al-nost insurmountable impediment to the culture of madder in England. It confisted in this circumstance, that madder being a crop raised on land, it was subject to pay the tithe in kind: which was in fact so heavy a tax on the produce, as together with the great expense and risk, from the want of a more perfect knowledge of the manner of cultivation, almost entirely difcouraged all attempts in a larger way. This obstacle was, nevertheless, removed through the endeavours of the Society, by the obtaining an act of parliament, to change the demand of tythe in kind to a modus, or composition, of five shillings per acre, for a term of years. The fociety thus, by their interposition in this matter, procured the first opening to that success, which is now likely to attend the attempts, to restore the production of this important article to our country.

The fociety, the mean time, exerted themfelves to incite the public attention and spirit, to undertake the culture of madder by premiums. The first they offered was for the producing twenty pounds weight, the most perfect and best cared. This was obtained in the year 1755. They then, being by this means assured, that a method was known in England of raising and curing good madder, proposed premiums for the largest roots, twenty in number, of one, two, or three years growth; which were accordingly claimed and obtained for each kind, in the year 1758, and again in 1759. Further premiums were given in 1763, 1764, and the following years.

Madder is a plant of very little beauty, it in some degree resembles the common cleavers or goose grass, in its manner of growth. The stalks are numerous, square, and commonly of a feddish colour: they are weak, so that they lie upon the ground in their lower part; and in the upper, commonly intended one with another. The leaves are long and narrow, they stand six at a joint; sometimes more, sometimes fewer, and are disposed like the rays of a star. Their natural colour is a dusky green, but they sometimes, especially toward the lower part of the stalk, grow reddish. The stalk is hairy, but the leaves are more so their hairyness is not a woolly down like that of some plants, but is short, rough, and hard, so that they prick the hands when touched.

The flowers grow at the tops of the ftalks, and small branches; they are small, but very numerous, and of a pale yellow. The feeds follow, which are contained in a kind of round little heads; the root, which is the vieful part, is extremely long, and of a beautiful red colour, duskyer on the surface, but very bright within.

The cup in which the flower of madder stands is very small, and stands upon the rudiment of that little round-ish fruit in which the seed is to be lodged: it is composed of a fingle green leaf, hollowed and divided into four little segments at the edge.

The flower is in the fame manner formed of a fingle leaf, a little hollow at the bottom, and divided lightly into four parts at the edge. In the centre of this rife four fhort filaments, each terminated by a fingle button or head, from the rudiment of the fruit, which, as it enlarges a little, thews ittelf to be composed of two parts; there rifes a fingle filament called the ftyle of the flower, this comes up in the midit of the four filaments just named, and is divided into two parts toward the top, each of which has a button to it : this, through certain imperceptible apertures, admits the dust from the heads of the other filaments for the ripening of the feed veffel, which then swells, and becomes a kind of double berry: in each part of which, or each berry, is contained a fingle feed.

There are two kinds of madder mentioned by those who treat of plants, these are the fix-leaved kind we have described, and one which has only four leaves at a joint, but the latter is not worth the farmer's notice.

Madder being one of those plants that roots deep, and the value of which is in the root; the foil for it should be deep and light. This is the principal caution, for it will get nourishment whether the ground be richer or poorer, provided it be not altogether barren. A black mould, such as is common in the sens of England, is very proper; and is the same soil whereon they plant it in Flanders, whence we have our greater supply. A loamy soil that is in some degree rich, and has but little clay in its composition, is also very proper; of a mixture of loam and mould, as is very common in many parts about the edges of the sen countries. A sandy soil will also do well if properly managed.

There is no part of England where this plant would thrive better than in these places, for they have all the advantage of the Flemish grounds, and this surther benefit, that they are drier; the Flemish often bursting their roots by their over moisture, or occasioning an expensive manner of dressing to pre-

vent that accident.

Whatever be the foil for madder it must be deep. We have observed it is the nature of the root to extend itfelf in length, and that no art can bring it to any great thickness; there-fore a depth of foil is the most effential point, that it may have room to penetrate. There are usually produced a great many side roots, which spread along just under the surface of the ground. These are the provision of nature, for the nourishment of the ftalk and leaves, the great root taking almost all the juices it receives to its own nourishment. Now as the stalks and leaves of this plant are of no use or value, it is idle to provide for the maintaining them in vigour at the expence of the main root. Thefe horizontal shoots never come to any value themselves, and as they only take that nourishment which should supply the main root, the proper course is to destroy them.

This account of the nature of madder, and of the foil that fuits it, naturally points out a new method of managing it to advantage; of all the plants that can be raifed, none is to perfectly fuited to the horse-hoeing husbandry. The foil it requires is such as perfectly suits those implements; the method of horse-hoeing, of all other practice, will the most effecenally and most essentially cut off the shallow and horizontal roots; and an the main roots are to be encouraged is their growth to the utmost, no method of planting can be fo proper as that in rows at a confiderable diftance from one another. This directs in every article the horfe-hoeing husbandry, as the method for raifing madder to an excellence, and perhaps fuch a one as it never reached yet in England. The culture of this profitable and ufeful species has been recommended frequently and firongly, and has been tried at different times with different fuccess, but always with some profit; we hope therefore that the farmer will be encouraged, from what has been found of the advantages of this crop, in methods less suited to its nature, to try it in the way we are about to propose; in the which it cannot fail of very well answering his care, expende, and troubles and according to which there is a reasonable prospect of his enriching himfelf by it in a few years culture.

Madder is to be planted in fpring; but the preparation of the ground for it must be undertaken long before, Let the farmer who intends to raife it look carefully out for a field that has a deep light foil, of the nature of either of those kinds we have mentioned. When he has fixed upon the field, in autumn, as foon as the crop is off the ground, let him plough it up deeply and thoroughly. Let him leave it i this condition three months, and then going over it with the plough once again, tear it up to a great depth, and thoroughly break and divide it : let him then leave it to himfelf till the end of March. Having fecured his fets, let him in the last week in March, fend in his plough again, fet to its greatest depth. As the ground has been twice ploughed before, it will very well give way to this. The fets are now to be taken off from the fides and heads of the old roots, and the ground is to be harrowed even. Then a line is to be drawn along near the edge, as in the planting of liquorice, and the fets are to be let into the ground in the fame manner, at a fcot distance from one another,

When one row is thus planted, the line is to be removed a foot and half, and another row planted, the fets in this not being placed opposite to those in the other, but just over against the middle-of the space between.

The line is then to be removed to the distance of five foot, and drawn strait over the ground as before, and a row of the fets are to be planted there; thus there will be a third row at five feet distance from the second, and at fix and a half from the first row: the line is then to be moved again one foot and half, and another, being a fourth row, is to be planted opposite the middle distances of the last. Thus the whole ground is to be planted out. The fets are to stand every where at the same distance in the row, as at first ordered; and the whole field will be laid out in double rows, with five feet intervals; the space or partition between one row and another, of each double row, being one foot and

When the fets are all in and lightly covered up, let the planter go over the places, where they stand, with a garden rake, and lay all level.

The beginning of April is a feafon when showers are seldom wanting; but if it should so happen that there are none, there must be the labour of once watering the sets. The best time for doing it is on the third day after their planting, and when this is done they may be left to nature.

The plants will now quickly appear, and as this is a time when the encreasing warmth of the season, and wet from the showers, fets every thing on growing, weeds will appear among them. As these must be principally feedlings, for we suppose no roots left in the tillage, they will not at once over-run the proper growth, because that is planted with good roots; fo that they need not be attacked fo foon as ever they appear; but when they have got a little height the hand-hoers must be sent in to clear the partitions of them between row and row, not meddling with those in the five foot intervals, except just on the outside of each row.

This is to be done with care and management, and a great deal depends upon it. The inftructions to be given the hoers are these. First to take care of the plants of madder, which being set regularly, and now up at some height, and being very different in

their aspect from the weeds, cannot well be miftaken; all this however must be pointed out to them, and they must be strictly cautioned; for the deftruction but of a few of the plants where they are fet feparate, and each intended for a large growth, will be a confiderable loss to the owner. This being pointed out to them, they are to be fent in with directions to cut up all weeds in the fmall partitions, and break the furface of the ground as deep as they readily can with those instruments; then they are to clear away between plant and plant of the madder; and thence advancing to the outfide they are to cut up the weeds, and break the ground for about a hoe's breadth all along the rows.

This done, the plants are to be left to themselves three weeks, in which time they will strike very strongly, and the ground just above them will be very clear of weeds, from the hoeing; but by this time the middle of the large intervals will be full of weeds of

fome growth.

The horse-hoe is now to be sent in, and is to cut along the middle of each interval, to as much depth as it can: this will thoroughly root up and defroy that growth of weeds, and break the ground. The weeds will, in great part, be buried, and will become a kind of manure, for weeds that cannot grow soon rot at this season, which is warm and wet; and the ends of some of the longest fibres of the madder roots will be broken off, and new ones will consequently grow in great quantities from them, as is seen in cutting of the fibres of roots in the gardener's way of planting; and there will be a fine quantity of fresh and free earth for these new roots, as also for what farther shoots the others may make; and it will be full of nourishment for them.

We have faid that the main downright roots are all that are of value in his madder plants. Now the horizontal or spreading ones, that run under the surface, are to be considered in two distinct lights, as they are larger or as they are smaller, for at one of these times they impoverish, but at the other they seed them; so that at one time they are to be nourished, and

at another destroyed.

It is while they are young that they

are of advantage to the main root, This is their condition in the present Instance, and it is therefore we are recommending every method to feed and to encrease them; and on the other hand, we shall soon after take as much pains to deftroy them. The part of the madder above ground, now though of fome bigness, is not so large as to demand any vaft quantity of nourishment; the root, on the contrary, is pushing downward, and grows the faster the more it is supplied by its fibres, and the less it is drained by the

plant above.

This is the case in many instances at the period of growth whereat the madder is at prefent, but in none more visibly. The first nourishment the new planted roots take in, goes to the pushing some fibres from themselves outward, and a shoot of stalk and leaves upward. This shoot takes up the greater part of the nourishment in the first days, but afterwards it grows flower, and requires a smaller proportion of what is drawn. After this there is a period when the main root is taken care of and supplied, that it may be able to fend up nourithment in abundance to the herb, when ripening its flowers and feeds, that being the great purpose of nature in all plants : for this purpole also in madder a number of long horizontal roots grow out every way under the furface

These horizontal fibres we have named, and for which we are now fo carefully providing by the horse-hoe, are in time to become those long horizontal and fide roots. At prefent they are very serviceable, for they draw which being not demanded in that quantity by the plant in its prefent flate, goes according to the defign of nature, to the feeding and enlarging present horse-hoeing has vastly encouraged, filled, and encreased them; but

the next is to destroy them.

Some time after this horfe-hoeing there will be weeds again in the partitions, and between plant and plant, for this is a feafon that produces them very quickly: the hand-hoers must be fent in again to cut them all up, and the plants of the madder being kept clear, will have a healthy afpect,

which is very effential to the good growth of the root, and which they would not have if choaked up with weeds: some weeks after this, when the madder has grown to a considerable fize, let the horfe-hoe be fent in a fecond time, with orders to cut much nearer one fide, or one row, alternately; by this means all the large horizontal roots on that fide will be cut and broken off, and only small ones will grow from the ends of them, which will tend to the service of the main root again,

The hand-hoers at this last time need not hoe the outsides of all the rows, but only alternately of those near which the horse-hoe is not this time to come, for the next hoeing it is to take the others. This inftrument could not be brought fo near the rows while they were young, for fear of tearing up or burying the plants, but they are too well established now to be in any danger on that head, especially as it is done only on one fide; for the horse-hoe is to be carried along the farthest fide of the next interval all the way, in the course of this operation; so that it never comes near both sides of the same row.

The plants will immediately after this thrive surprifingly, and advance toward their flowering. There will need no more hand-hoeing, for they will be now of such a fize and strength, as to destroy all the weeds about them and the next horse-hoeing, which will be the last for the summer, will com-pleat the work for the first season,

This is to be done as foon as th weeds have got fome head again in th intervals, for they will rife there tho' they be over-powered in the partitions. The inftrument is now to be carried on the other fides of the rows alternately, fo that now there will have been a thorough and deep cutting up of the ground, near both fides of every

The large horizontal roots, which would impoverish the main roots, and be of no value in themselves, are now broke and cut off on this fide also; and the main roots, which are now large and strong, have all the advantage of the nourifhment.

The flower and feed of madder are wholly ufeless: and as a plant's running to feed impoverishes the root, this

dierates

dictates a new practice in the present case, which is the cutting down the plants just before they are breaking out into flower.

Let this be done with caution, and with moderation. The farmer is not to cut them down close to the ground; it is enough if he stop their running to seed, therefore all he has to do is to cut them off half a foot below the top. This will take off all the flower buds, and yet will leave enough of the plant to draw up a great quantity of sap, and keep nature in her proper course. By this means a vast quantity of rich juice, intended for the perfection of the plant in its ripeness, will go to the main root, for therewill be no large side roots to take it up; and the increase in that offul part will be very surprising.

The stalks will shoot out side branches from the part where they were cut off, and from every joint below, and will grow stronger for that cutting, and very bushy. Some of these will make an attempt to flowering, and they may be left to themselves in it. The few slowers that grow upon these shoots are not like the full and universal flowering of the whole growth, they will do neither good nor harm, and are not

worth regarding.

The first fummer will thus pass, and the plants, not having drawn a vaft deal of nourishment upwards, the roots will be greatly strengthened and encreased. This will be the condition of the crop at the autumn of the first feafon; and all that is to be done is in the fame manner to promote the growth of the root, during the rest of the time it is to remain in the ground, which is to the next autumn. A crop of madder, thoughit remain but eighteen months in the ground, is to be accounted by the farmer as a two years flandard, because the preparation of the land takes up the other fix. The whole course is this; at autumn the ground is to be taken for it; during the winter it is to be prepared: and in fpring it is to be planted : the next autumn the plants have had one fummer's growth, and they are to have another, for they must remain through the winter, and the following fummer: and the roots must be gathered in autumn following, which is two years from the time of beginning the preparation of the ground.

In the usual way of management, when the roots are taken up at this time for fale, another piece of land is to be fought out for the next crop; but in the method we have proposed by the horsehoeing husbandry, the same piece of ground may raise madder for ever; and will be fitter for it than any other could

All the winter the ground is to lie perfectly quiet: in fpring a fortnight before the plants begin to fhoot, the horsehoe should be sent in to cut a deep surrow in the center of every large interval, and the hand-hoers to cut up those weeds that rise in the partitions. After this there will be no more care needful about them, for the growth will be too strong to suffer any annoyance; but the intervals will have weeds, and should be horsehoed just as in the preceding summer, to prevent their farther growth, and to give new sapplies of nourishment to the main roots, as well as to cut away and destroy the side or horizontal ones.

This is to be done exactly in the fame manner as before mentioned for the first season, and therefore needs not be described more at large here. By this means the crop will proceed as it ought in every respect; and this season the whole care will be over.

In autumn, when the plants wither, is the time to take up the roots; this must be done with care and circumspection, for the more they are broke in the ground, the more of them is lost. The regular method of planting them comes in here to be of great use, for the people employed to take them up know where to look for them one by one; and where they may, and where they may not, work about them,

When they are all taken up they must be cleaned from dirt, and after a quantity of fine sets are separated for a new plantation, they are to be dried for sale. The dyer will be always a ready purchaser, nor need the husbandman fear to overstock the market.

Madder has little or no fmell; a fweetish taste, mixed with a little bitternes. The virtues attributed to it are those of a detergent and aperient, whence it has been usually ranked among the opening roots, and recommended in obstructions of the viscera, particularly of the kidneys, in coagulations of the blood from falls or brui-

fes, in the jaundice, and beginning

It is observable, that this root, taken internally, tinges the urine of a deep red colour; and in the philosophical transactions, we have an account of its producing a like effect upon the bones of animals who had it mixed with their food: all the bones, particularly the more folid ones, were changed both externally and internally, to a deep red; but neither the fleshy or cartilaginous parts fuffered any alteration : fome of these bones, macerated in water for many weeks together, and afterwards steeped and boiled in spirit of wine, lost none of their colour, nor communicated any tinge to the liquor.

Petty MADDER, [Afgerula.] A plant growing wild in many woods in Eng-land. See Woodsoof.

MADS. EARTHWORMS MADWORT. [Alyssum.] There are several species of this plant growing naturally in warmer climates, yet will in general bear the cold of ours, They are propagated by flips or feeds; the flowers appear in Aprilor May; are various, white, yellow, &c. and last about three weeks in beauty, if the weather is moderate.

MADNESS, in a Dog. There are abundance of prescriptions for the bite of a mad dog; but whether any are good we cannot presume to say. The Ormskirk medicine is much esteemed; but if we might advise, it should be to cut out the part or cauterize it imme-

diately

MAHOGANY, [Cedrus Mahogoni.] This tree is a native in the warmelt parts of America, growing plentifully in the islands of Cuba, Jamaica, and Hispaniola; there are also many of them on the Bahama islands. In Cuba and Jamaica there are trees of a very large fize, fo as to cut into planks of fix feet breadth; but those on the Bahama islands are not so large, though they are frequently four feet diameter, and rife to a great height, notwithstanding they are generally found growing upon the folid rocks, where there is scarce any earth for their nourishment. The wood which has been brought from the Bahama islands has usually passed under the appellation of Madeira wood, but there is no doubt of its being the same wood as the mahogany. Vot. II.

The leaves of this tree are winged like those of the ash, having commonly fix or eight pair of pinnæ (or lobes) which are shorter and broader at th base than those of theash, where the adhere to the midrib by very fhort footftalks; these lobes are very smooth, having but one vein running through each, which is always on one fide, fo as to divide them unequally. The entire fruit, before it opens, is of a brown colour; these fruit grow erest upon long footstalks, which closely adhere to the five cornered column, ru ning through the middle of the fruit, and to which the feeds are fastened, lying imbricatim like flates on a house, over each other; fo when the fruit is ripe, the outer cover divides at the bottom into five equal parts; and when these fall off, and the seeds are dispersed, the foot-stalk and column

remain some months after on the tre

It is propagated by feeds, whis may be eafily procured from the Bahama islands, from whence most of the good feeds which have come to England were brought; for most of those which have been fent from Jamaien, although brought in their pods, have not succeeded, whereas those from the Bahama islands have grown as well as if they were immediately taken from the trees; the feeds should be fown in fmall pots filled with light fandy earth, and plunged into a hot-bed of tanners bark, giving them a gentle watering once a week; if the feeds are good, the plants will appear in a month or five weeks; and when the plants are two inches high, a sufficient number of fmall pots should be filled with light earth, and plunged into the tan-bed a day or two, that the earth may be warmed before the plants are put into the pots; then the young plants thould be shaken out of the pots, and carefully feparated, fo as not to tear their roots, and each planted in a fingle pot, being careful to shade them till they have taken fresh root; after which they must be treated in the same manner as other tender plants from the fame climate, being careful not to give them much water, especially in winter. If the plants are properly managed, they

will make confiderable progress.
MAIDEN-HAIR, [Adianthum.] The species are 1. The officinal or true Maidenhair, 2. Canada Maiden-hair. The first fort is the true Maiden-hair, which is directed to be used in medicine; but as it does not grow naturally in England, fo the Trichomanes is ufually fubflituted for it, which is found growing wild in great plenty in feveral parts of England. The other is a native of the South of France, Italy, and the Levant. It usually grows out of the joints of walls, and the fiffures of rocks, fo that whoever is inclinable to keep this plant in their gardens, should plant it in pots filled with gravel and lime rubbish, in which it will thrive much better than in good earth; but the pots must be sheltered under a frame in winter, otherwise the plants are often killed by the froft.

The fecond fort is often preferved in gardens for the fake of variety; this should be planted in pots, and treated in the fame manner as the former; for although it will live through the winter in the open air in moderate feasons, yet in severe frost it is often destroyed. This fort grows naturally in Canada in such quantities, that the French send it from thence in package for other goods, and the apothecaries at Paris use it for the Maiden-hair, in all their compositions in which that is ordered.

Maiden-hair has been greatly cele-

brated in diforders of the breaft, proceeding from a thinness and acrimony of the juices; and likewise for opening obstructions of the viscera, and promoting the expectoration of tough phlegm. But modern practice pays little regard to it; nor is it often to be met with in the shops.

English MAIDEN HAIR, [Trichomanes.] There are three or four varieties of this plant, which grow naturally in Europe; but in America there is a great number of species, which are remarkably different from each other, as also

from the European kinds.

Thefe being of the tribe of ferns, or capillary plants, are feldom preferved in gardens. Their roots should be planted in moist shady places, especially the European forts, which commonly grow from between the joints of old walls, and in other very moist shady situations; but those forts which are brought from hot countries must be planted in pots filled with rubbish, and strong earth mixed, and in winter they must be screened from hard frost, to which, if they are exposed, it will will destroy them,

The common fort in England is generally fold in the markets for true Maiden-hair, which is a very different plant, and not to be found in England, it being a native of the fouth of France, and other warm countries, fo is rarely brought into England.

White MAIDEN-HAIR, [Ruta Muraria.] A plant growing out of old walls
in many parts of England

in many parts of England.

MAIZE, [Zea.] See GUINEA
WHEAT.

MALACCA BEAN. See Anacadium, MALABAR-NUT, [Jufficia.] This plant is a native of Ceylon, but hardy enough to live in a green-house, in England, without any artificial heat. It rises here with a strong woody stalk to the height of twelve or sourteen feet, sending out many spreading branches, garnished with spear-shaped oval leaves six inches long and three inches broad, placed opposite. The slowers are produced on short spikes at the end of the branches, which are white with some dark spots, but are not succeeded by any seeds in England.

It may be propagated by cuttings, which, if planted in pots in June and July, and plunged into a very moderate hot-bed, will take root, but they must be screened from the fun; and if the external air is excluded from them, they will succeed better than when it is admitted to them. It may also be pro-pagated by laying down the young branches, which will take root in one year, and then should be put each into a feparate pot, and placed in the shade till they have taken new root; then they may be removed to a sheltered fituation during the fummer, and in the autumn they must be housed, and treated in the same way as the orange trees, with only this difference, that thefe require more water,

MALANDERS. This is an external diforder of a horse very painful and troublesome, and very difficult of cure; insomuch that some say nothing more is to be attempted than to alleviate the pain; and that it is dangerous to stop the distemper.

This is a very unhappy error; for there is no degree of the Malanders but may be cured by proper management; and that with perfect fafety.

This difease shews itself on the forelegs, upon the inner part, just against the bending of the knee.

It is not a knob or ulcer like the farcy, but a hard, dry, flat scab, of which fometimes there is only one great one, fometimes feveral fmaller; and thefe are cracked and chopped upon the fur-face, and have stiff hairs like bristles growing upon them.

This is the whole of the diforder: it fometimes is very violent and inveterate, fometimes more flight. it is very bad it makes the horse halt; and when least it occasions him to go

The general cause of the malanders is bad management. It is the common disorder of horses kept in a slovenly manner, and much more rarely affects those which are managed more

stiff till warmed with exercise.

Carefully.

Those horses are most subject to it which have most hair upon their legs, and they are the most difficult to cure.

One effential difference the farmer is to make in his conduct, for a horse under this diforder, which arises from this confideration, that fometimes the malander is only a foreness in the part, while the horse is otherwise in health; fometimes the blood is corrupt and bad, and in this cafe the diforder is more violent in its degree, and more difficult to be cured.

When the malander is only the effect of careleffness, and it is upon a horse otherwise healthful, the method to be observed is this. Let him be kept to his usual work and usual food; and let the following wash be made for the part :

"Set on a faucepan with three quarts of water, put to it half a pound of fcenugreek-feed bruifed, and a pound of fresh marshmallow root cut in flices. Boil all this till it is like a jelly, strain it off hot, and press it hard out, then add to the thick liquor half a pound of opodeldock ointment.

Make some of this hot morning and night, and dipping flannels in it, wrap them round the leg where the complaint is, as hot as the hand can bear to touch it. Let this be several times repeated; and at the last of all, wet fome of the ingredients, which must be faved when the liquor has been pressed out, with some of the liquor hot, and lay them upon one flannel, cover them with another, and wrap the whole round each leg, tying it round

fo as to keep it on, but not tight.

Let this be done every day twice, as directed, till the hard fubstances begin to foften; after this once in four and twenty hours will do; and there will thus be a perfect cure.

Before the first dreffing let the hair be clip'd round about the place, and the whole part about the Malanders wash'd clean with warm soap suds, Let this be repeated at times during the cure; and after it is perfected, let the legs be kept very clean in this part,

for fear of its returning.

In this manner a horse will be cured very eafily, and very certainly, that has no taint in his blood a but if there be that added to the outward malady, care must be taken accordingly, giving inward medicines at the fame

When this is the case, the owner will perceive it by his habit of body; and by the outward remedy not taking its defired and natural effect; he is then

to proceed thus:

Let a pound of crude antimony in flour of brimstone; & let fome of this be sprinkled among his food. This is better in fuch a case than giving it in balls or drenches, for he takes it with his nourishment a little at a time, and often; and accompanying the food in its paffage through the Intestines, its virtue goes into the blood, together with the nutritive part of the food.

I have heard many who should know fomething better than the vulgar, fay, that they would not cure a horse of the malanders if they could; for that all that is prudent is to keep him from growing lame with them. They have an old proverb that has mifled them from father to fon for many generations, which is, "that curing the malanders is shutting up the wolf in the fheep-cot." But they may be fure of this, not only in the present case, but in all others whatever, that there will be no danger of damage in curing any outward disorder, when the blood is at the same time rectified within,

We have shewn the difference already, that when the complaint is only external, outward remedies alone may be trufted, but when the blood is affected, inward things must be given to affift. The danger even of a mif-

take in these cases, is not so great as these persons apprehend; for when the blood is in fault, and no care has been taken to amend it in the cure, the common confequence is only, that it

reaks out again.
MALE BALSAM APPLE.

MALLOW, [Malva.] This is a ant growing common enough in the the leaves are ranked the first of the four emollient herbs: they were formerly of some efterm, in food, for loosening the belly; at present decoc-tions of them are sometimes employed in dysenteries, heat, and sharpness of urine, and in general for obtunding acrimonious humours: their principal use is in emollient glystera, cata-plasms, and fomentations. There are several species of this plant, exotics, cultivated in the gardens, pro-

Pagated by feeds.

Baftard MALLOW. See BASTARD.

Jew's MALLOW, [Corchorus.] There
are leveral species of this plant brought from the East and West Indies and South America, but are all too tender to thrive in England in the open air, therefore their feeds must be fown on a not-bed in the spring, and when the plants are come up and fit to remove, they should be transplanted on a fresh hot bed to bring the plants forward. After the plants are rooted in the new hot-bed, they must have free air admitted to them every day, for they must not be drawn up weak; and when they have obtained strength, they should be transplanted each into a separate pot, and plunged into a hot-bed, obferving to fhade them from the fun till have taken root; in June they should be gradually inured to the open air: part of them may be shaken out of the pots, and planted in a warm border, where, if the feason proves warm, they will flower and perfect their feeds; but as these will fometimes fail, so it will be proper to put one or two plants of each fort into pots, which should be placed in a glass-case, where they may be fcreened from bad weather; and from these good seeds may always be obtained.

Indian Mat Low, [Urens.] There are four species of this plant brought from China and the coast of Malabar. They are propagated by feeds in a hotbed, and require the affiftance of a flove

to preferve them.

Mark Marrow, [Althea.] This plant grows naturally in moilt places in divers parts of England, and is frequently used in medicine. It has a perennial root and an annual stalk, The which perifhes every autumn. stalks of this plant grow erect to the height of four or five feet; thefe are garnished with leaves which are hoary and foft to the touch, and placed alter-nately on the branches; the flowers come out from the wings of the leaves, which are shaped like those of the mailow, but are smaller and of a pale colour. It may be propagated very fast, either by seeds or parting of their roots. When it is propagated by seeds they should be fown in the spring, but if by parting of the roots, the best time is in autumn, when the stalks decay. It will thrive in any foil or fituation, but in moift places will grow larger than in dry land.

This plant has the general virtues of an emollient medicine; and proves fer-viceable in a thin acrimonious state of the juices, and where the natural mu-cus of the intestines is abraded. It is chiefly recommended in sharp deflux-ions upon the lungs, hoarseness, dysen-teries, and likewise in nephritic and calculous complaints; not, as some bave supposed, that this medicine has any peculiar power of diffolving or ex-pelling the calculus; but as by lubricating and relaxing the veffels, it procures a more free and eafy passage. Althea root is fometimes employed externally for foftening and maturating hard tumours: chewed, it is faid to give eafe in difficult dentition of children. There are two other fpecies of this plant brought from Portugal and

Hungary, both propagated by feeds.
Rose MALLOW. See HOLLYHOCK. Tree Mallow, [Lavatera.] There are feveral tall herbaceous flowering annuals and thrubby perennials of this plant, bearing large red, white, and purplish flowers, continuing in bloom from June till August or September.

They are all proper ornaments for any part of the pleafure ground. The annuals particularly have fingular beauty, their flowers being large, numerous, and conspicuous, and very proper furniture where large showey plants are required; and are easily and abundantly raised from seed in the open

The shrubby kinds are also good furniture for fhrubbery compartments, having large, ftrait, upright, durable Rems, terminated by branchy buthy heads, and very large foft foliage, that form a fine variety in affemblage; though their flowers are often hid by their large leaves. These perennial kinds should have a dry soil, otherwise are apt to go off in two or three years; a fresh supply, however, may always be raised from seed in the common ground.

They are propagated abundantly by feed in the open ground in the fpring; the annuals in the place where fowed, and the perennials also either where they are to remain, or for transplan-

tation.

Syrian MALLOW, [Hybifcus.] This plant is commonly known among nurry-men by the name of Althwa frutex,

Viscous MALLOW, [Malvaviscus.]
This hath a firubby stalk, branching ten or twelve feet high, bearing scarlet flowers, fucceeded by roundish scarlet viscous berries.

Venice MALLOW, [Hibifeus Trionum.] Trionum, Bladder Ketmia, Flower of an hour. This is an annual plant bearing flowers of very fhort duration, which in hot weather only just open, and then wither away in an hour or two. Its propagation is by feed fown either in autumn or fpring in the place where they are to remain, leaving about three of the best plants on the spot,

Yellow MALLOW. See INDIAN

MALLOW.

MALT. Barley prepared, to fit it for making beer or ale, by ftopping it mort in the beginning of vegetation.

It is faid, that the foil on which barley grows makes a confiderable difference in the grain, and that the barley fittest for malt is that which grows on a rich, light, or gravelly foil, and which has been raifed from feed brought from a farm of a different foil and fituation. The fullest and largest grains of fuch a crop flould be chosen for making malt. It should be heavy and perfectly found, and fuch as has not fuffered any acci dent in the field. Its being a little heated in the mow is by some reckoned an advantage, because the grain will be the more equally dried, will confequently the more equally imbibe water. If it has been fo much mow-burnt as to look blackish when broken at the root end, or as Mr. Combrune fays, if it has fuffered a heat of 120 degrees, it is unfit to make good malt. It is also found by experience, that barley taken immediately from the field, does not make to kindly as that which has been some time in the house, or mow. Special share ould be taken that it be free from the feed of weeds; for thefe, in the malting, are apt to give the grain a bad talk which cannot by any means be afterwards got rid of.

By germination, all the principles of barley are put in action. The heat which it undergoes in malting feparates and divides its parts; and the viscidity which it before poffeffed is removed t the loofer texture of its oils, and their intimate union with the falt, which gives malt the fweetish rafte that diftin-

guilhes it from barley.

In order to its being malted, the bar-ley is put into a ciffern lined with lead or stope, and covered with water about fix inches deep above the barley, to give room for its swelling. All the good grain will fink in the water; but after ftirring it, the imperfect or diftempered grains will rife to the furface. These should be skimmed off, and given to Poultry or hogs, for they will never make good mak. By the water gaining admittance into the barley, a great quantity of the air is expelled, as appears from the number of bubbles which rife on the furface.

The barley is left in the water two or three days, more or lefs, in proportion to the heat of the weather and the dryness of the barley. A judgment is formed that grain is fully faturated with water, from its appearing turgid, and easily giving way to an iron rod dropped perpendicularly into it. Or, take a corn from the middle of the ciftern, and hold it steadily by the two ends, between the fore-finger and thumb: press it gently, and if it continues firm when fo preffed, and the fkin does not break, it must foak longer: if it crushes together and feels mellow, and the fkin crack, it is watered enough. Nicety in this is a material point, and can be learnt only by experience. If the grain should be fuffered to remain too long in water, it would begin to lofe part of its fweetnefs. When it has been steeped sufficiently, the water is drawn off.

The water used for this purpose should be that of a clear running stream, or rain water; or if such cannot be had, pond water, provided it be sweet and clean, will do very well; or pump water, which should be rendered softis it be naturally hard. If the water made use of be any way tainted, it communicates to the malt a taste which it never loses. Mr. Combrune advises the adding of lime to the water in which the barley is steeped: but this seems to be improper, because it appears from Dr. Home's experiments that lime renders water hard.

From the ciftern, the barley is laid in a regular heap or couch, where it must remain thirty hours, or till it has contracten a heat. It must then be worked in one or more heaps, and turned every four, fix, or eight hours, according as the weather is cold or hot. When it begins to spire, it should be turned every three or four hours, according to the temperature of the air; and as it comes (for fo its spiring is commonly termed) the heap must be fpread thinner to cool it, lest it be heated too much, and the germination be carried on too fast, by which the oils would be too much confumed. The turning of it must be continued in proportion as it is more or less flow in growth, fo that it may be brought to-lerably dry to the kiln. When the roots begin to deaden, the couch must be thickened again, and often turned, that the growth of the roots may not revive. At this time, the spire should be near piercing through the outer skin of the barley: for if it grows quite out, the ftrength of the malt will be too much confumed. After the malt is made thus far, the common practice is to lay it at once on the kiln: but the best way is to gather it all up in one heap, to let it lie in that state twelve hours, and then to turn it every fourth hour, during the space of twenty-four hours,

No person should be suffered to tread on the malt with their shoes, while it is on the shoor: because many grains are inevitably bruised thereby, and these, vegetating no longer, afford the roots of the other grains a substance into which they extend their fibres, and are by that means entangled in bunches: and besides this, the bruised corn acquires a degree of putrefaction which taints the liquor made of the

malt intermixed therewith. Equal care should also be taken, that the grain be not bruised by any other means.

Mr. Combrune thinks, that the time most proper for malting is when the temperature of the air is such that barley begins naturally to germinate, at which feafon the thermometer marks from between 32 to 40 degrees. How far that time may be extended, experience alone can determine. The warmer the weather is, the greater must be the disadvantage under which the malster labours; because the motion of the fluids is then fo strong, that the process goes on too quick, and the finer parts are apt to fly off; the confequence of which is, that instead of a fweet, the malt inclines to a bitter tafte, the oils being turned rancid. This is so universally experienced, that brewers carefully avoid purchasing what is termed latter-made malt,

The grain thus prepared for drying is spread on the kiln, where, meeting with a greater heat than is suited to vegetation, its farther growth is stopped. It is spread on the kiln three or 4 inches thick, and turned every three or four hours. The laying of it thicker is often attended with inconveniences, among which is particularly its being unequally dried; and therefore that should be avoided. The strength and duration of the fire is different, according as the malt is intended to be dried, pale, amber, or brown. The pale malt a requires more leisure and less fire than the amber or brown.

Pale and amber malt are dried with coke or culm, which not emitting any smoke, give the malt a brighter colour, and do not communicate that bad relish which malt has when dried with wood, straw, &c. the smoke of which taints it. Coke is best, because its fire gives a steady and constant heat, whereby the malt is dried uniformly. If wood, or any vegetable suel be used, it should be extremely well dried, in order that being as free as possible from moisture, it may yield the less smoke.

The fize of the malt kiln is generally proportioned to the quantity of malt for which it is intended. Some build their kiln fquare, and others make it round; but this last is undoubtedly the best form, because the heat of the fire is more equally diffused therein, and the grain is of course more equally dried.

Variano

Various fubstances have been made use of for covering the kiln, such as tiles, plates of tin, and wire: of these, the wire is to be preferred, because it does not contract so great a degree of heat as to parch the grain in contact with it : but for this very reason, haircloth is preferable to any other covering; because, when any part of the malt is in immediate contact with a fubstance more folid than itself, and therefore capable of receiving a proportionably greater degree of heat, the malt in contact with that heated body is parched or burnt, by heat which is not equally diffused through the whole mass, which mass cannot therefore be all equally heated. The hair-cloth is spread upon small wooden rafters, and these are supported by bars of iron laid across the kiln.

An ingenious and attentive malster marked the degree of heat in the malt whilst on the floor: and the result of his observations in this respect is as follows. During the first ten days that the malt was on the floor, the heat in it was between 50 and 60 degrees. During the next three or four days, the heat was increased from 60 to 65 and 67 degrees; and during the last days of its lying there, to 80, 84, and 87, which last was the degree of heat when the malt was put on the kiln. There cannot be any absolute rule as to the difference of heat during the different times in the process of malting, because it must be suited to the heat of the air : at least we have not yet sufficient data whereon to found fuch a calculation. The heat of the malt on the kiln when fit for pale malt was 120 degrees, and when it was fit for brown the heat was 147

This intelligent artist's observation, that the malt was fit for what is called pale malt when its heat was at 120 degrees, suggests a caution which should be most carefully attended to, namely, that whatever colour it be intended to give to the malt, the heat at first should always be the same: thus, for example, malt which is dried to the degree of high brown, should first be rendered pale malt, then amber, and so on progressively; not by a sudden increase of the fire, but by a longer continuance thereof. In this manner, the whole body of the grain is equally and gradually dried; whereas a strong and

quicker fire would parch, or as it were finge the outfide, while the internal parts remain moift: and as that moifture is afterwards evaporated, it must crack the furrounding hardened cruft, whereby the grain is again damaged in another respect.

As foon as the malt is dry, it must be removed from the kiln, and fpread thin, that it may cool to the temperature of the air. " It cannot be supposed, that any of its parts are capable of retaining the fire in fuch manner as not to fuffer it to escape; though some have conceived that they do. In proportion as malts are dried, their particles are more or less separated, and coming in contact with water, they strongly attract from it particles which fill up their interstices. In mashing, this action between the malt and the water generates a small degree of heat, but no way durable; though from hence arose the opinion, that brown

Barley may, at a medium, be faid to lose by malting one fourth part of its weight, including what is separated from it by the roots being skreened off: but this proportion varies, as it is more or less dried.

malt is full of fire,

The condition of the barley, as to its greenness or ripeness, at the time of its being gathered in, is clearly discernable when it is melted. If it were gathered green, it rather loses than gains in quantity, the malt becomes of a smaller body, appears shrivelled, and is often unkindly hard; whist, on the contrary, that which was cut at full maturity increases in malting, appears plump, bright, and clear, if properly carried thro the process, and on being cracked, readily yields that fine mealy substance so much desired by brewers.

Malt which has not had a fufficient time to shoot, so that its plume, or aerospire as the adepts in malting call it, may have reached to the inward skin of the barley, remains charged with too large a quantity of its unattenuated oils. All those parts which have not been put in motion by the act of generation, will, when laid on the kiln to dry, be so hardened, as not to be soluble in water, and consequently will be lost to the strength of the drink.

When malt is suffered to grow too much, or until the spire has shot through the skin of the barley; though all that is left be malt, yet as too large a portion of its oils will have been expended in vegetation, the malt will be greatly diminished in proportion to what it ought to have been, & what remains cannot be fit to brew drink for long keeping, because of the loss of the oils.

Malt which has been duly worked on the floor, will, if it has not been fufficiently dried on the kiln, be apt to germinate or fprout afresh; perhaps to conceive fo great a heat as to take fire; and should it continue long with a moderate degree of heat, the least evil that can be expected is, that it will grow mouldy and have an ill flavour.

Malt well worked, but over-dried, will be so hardened, or its saponaceour quality will be so destroyed, that it will not imbibe from the air that mossiture which is necessary to mellow it, and render it sit for brewing: for when it has been previously softened by the mossiture of the air, it mixes more easily & more intimately with the water, and by that means yields a more copious extract, than it would otherwise do:

Malt juft, or but lately, taken from the kilh, remains warm a confiderable time. Until it becomes as cool as the furrounding air, it does not mellow by the addition of a due quantity of moifture from the air: and the wort made of fuch malt requires a much longer boiling before it breaks, than that which is made of malt fome months old.

The practice of those maisters who sprinkle, water on malt newly taken from the kiln, to give it the appearance of having been made a proper time, is highly blameable. It is in fact a downight fraud, practifed chiefly because less grain then fills the bushel: but a farther evil is, that if it be not used speedily, it heats, foon grows mouldy, and suffers great damage.

Malt dried on a kiln not sufficiently heated must require a proportionably longer time for it to receive the due effect of the fire, for want of which it will be in the same state as malt not thoroughly dried. If the fire be too quick, or too fierce, instead of gently evaporating the water from the corn, it scorches the outward skin, and separates it from the body of the grain. The malt to which this happens is called blown malt; of which Mr. Combrune observes, that by the intermal expansion of its parts, it occupies

a larger space than it ought to do. He adds, that if such a fire be continued, it changes some parts of the grain into so brittle a substance, that the malt is said to be glassy. The particles which are thus hardened will not dissolve, or but in small proportion: so that they frequently occasion an almost total want of extract, which, in the phrase of the art, is termed setting the grift.

The goodness of malt may be known by the following marks. Bite a grain of it afunder, and if it taftes mellow and sweet, breaks soft, and is full of flour from one end to the other, it is good. It has a round body, and if upon putting fome grains of it in water they fwim on the furface, it is good. Barley finks in water, and malt that is not well made will do the fame: but it is to be observed that this is not an invariable proof, because if the male be broken, or in the least cracked, it will take in water, and fink. Malt that is rightly made will not be hard, but of fo mellow a nature, that if drawn over an oak board, across the grain, it will leave a white line upon the board, like a mark of chalk. Its fmell also may be consulted; for malt,

from the water used in the steeping,
Before malt is ground, it should be
freed from the tails and dust, which
would otherwise heighten the colour of
the wort, render the liquor muddy,
and give it a bad taste, which could
not afterwards be got rid of. The cylindrical sleve will be of excellent use
for this purpose.

though otherwise good, may have con-

tracted an ill scent from the fuel, or

The malt must be broken, in order to its communicating its virtue to the water. If it be ground too small, its flour will mix too freely with the water, and cause the wort to run thick. Many are of opinion that the best way is only to crack it, fo that none of the grains may come out whole: for the intent is, that the water should draw out an extract, but not be mixed with the mealy part, in the manner of paste Some think that malt is or gruel. better ground by a stone mill, than by a steel one, because the former bruises it, and the latter only cuts the grains.

After the malt is ground, it should lie some time to mellow, in a cool room, where no sun comes. The time

time for this is different, according to its kind. Brown malt may be ground at from three to fourteen days before it is used, in order that the corn, which is rendered uncommonly hard by that degree of drying, may be gradually foft-ened by the moisture in the air; by which means it will become the more foluble in water. The pale maits re-quire only one or two days. After lying thus in the air less mashing suffices, the strength of the malt is more perfectly extracted, and the beer will be confiderably itronger than it would be with the fame quantity of malt taken directly from the kiln. Care must be taken that it get no damage in lying.

Mr. Combrune observes, that malt

imbibes moisture more readily by being ground and exposed for some time to the air, than it does when whole; and that as the dampness thus absorbed by the grain is in reality fo much cold water, malt which has been long ground requires to be mained with hotter water than it would otherwise

be necessary to use.

To know whether malt has been mixed with barley unmalted: Take a bowl of water and throw into it a couple of handfuls of the malt; give it a gentle ftirring, and the barley which has not been malted will fink to the bottom; the half-malted grains will have one end funk, being in a vertical position; and the good malt will swim.

MALT Dust. This is an excellent manure fown as a top-dreffing on wheat in the spring, especially on harsh, clayey and stubborn foils.

MALT WORM. A cankery fore in the hoof of a horfe fo called.

MAMMEE. This is a very large eegrowing both in Afia and the West-Indies to the height of 60 or 70 feet.

Both these trees in their native foil produce abundance of fine fruit, as large as Catharine peaches, of a yellow-ish green colour, and said to be of a delicate flavour.

In this country they require to be continued constantly in the stove, fo must be kept always in pots, and placed in that conservatory, where they will eause a fine variety all the year with their large splendid soliage.

Their propagation is by feed, which arrives from America, &c. in fpring. Sow it in small pots of light rich earth, and plunge them in the bark bed, Vol. II.

where they will foon come up jugive gentle waterings, and about August transplant them into feparate pots a fize larger, plunging them in the barks, bed, and give shade and water till fresh rooted.

Phofe planes are prefe

MANCHINEEL TREE, Hipp mane. This is a very large tree in its native foil, almost equalling the oak in fize; the wood is much efteemed for making of cabinets, book-cafes, &c. being very durable and taking asfine polish; it is also faid that the worms will not eat it. As these trees abound with a milky caustic juice, they make fires round their trunks before they are felled to burn out their juice, otherwife those who fell them would be in danger of losing their fight, by the juice flying in their eyes: for wherever this falls upon the skin, it will raise blisters, and if it comes upon linen it will immediately turn in black; and on heing washed will come in holes. It is also dangerous weaking of the wood lifter it is lawed out to for if any of the factories. dust happens to get into the work men's cyes, i industrial inflammation and the loss of fight for some title; t prevent which, they generally cow their facts with fine lawn during the time they are working the wood. con

This tree bath a smooth brownish bark, the trunk divides upwards into many branches, garnished with older leaves ending in acute points, die fawed on their edges, and are of lucid green, flanding on fort for ftalks. The flowers come on in the fpikes at the and of the branches, bai of both fexes in the fame pikes of having no petals they make but little appearance; these are succeeded by fruit about the fize and of the fame shape as the golden pippin, tutning of a yellow colour when ripe; which has often tempted frangers to eat of the to their coft, for they inflame the mouth and throat to a great degree, caufi which is dangerous unless remedies are timely applied and and ve benefits.
The inhabitants of America believe

it is dangerous to fit or lie under si es, and affirm, that the rain ordew hich falls from the leaves will raife blifters; but it is very certain that una lefa the leaves are broken, and the juice of them mix with the rain, it will do

Thefe That I spound, still and Thefe

These plants are preserved in some of the gurious gardens in Europe, where they can never be expected to rife to any great height, for they are too tento live in these northern countries it in stoves; they rise easily from

feeds, provided they are good.

MANDRAKE, [Mandragora.] This plant grows naturally in Spain, Portugal, Italy, and the Levant, but is pre-breed here in the gardens of the qurious. It hath a long taper root, shaped like a parsnip, which runs three or four bet deep in the ground; it is fome-times fingle, and at others divided into two or three branches, almost the colour of parinip, but a little darker; from this arises a circle of leaves, which at first stand erect, but, when grown to their full fize, spread open, d lie upon the ground; they ore than a foot in length, and four rive inches broad in the middle, of edark green colour, and a foetid fcent. the root, without any foot-flalk; servers them come out the flowers, with them come out the flowers, with flanding upon a separate foot-lalk about three inches long, which life arise immediately from the root; flowers are five-cornered, of an the flowers are five-cornered, of an ethaceous white colour, foreading pen at the top like a primrofe, having the hairy flamina, with a globular semen in the center; supporting an which apped flyle. The germen after-circle tirrer so a globular foft berry lypop the leaves, which, when fully rown, is as large at a nutmey, of a allowift green colour when ripe, full finally, in which the kidney-framed and are lodged. It flowers in March, and the feeds are ripe in July.

MANGE. A well-known filthy lifeafe in a horfe, which makes him

inft every thing he can lean on, and if other horfes that are with him are not removed, they are subject to catch it from him. It is known by the hair staring, and in many places peeling away from the skin, on which a four will arife. This diforder is occasioned by over-heats and colds, hard riding, or labour, whereby the blood is corrupted, or by feeding upon un-whollome meat. To cure this difagreeable diftemper, we would recommend the following method:

"Take of tobacco stalks half a pound, tobacco dust one pound, black soap half a pound, allum and

bay falt each a quarter of a pound, green broom a large handful, and ftone lime about the fize of a hen's egg; boil all thefe in two gallons of urine, till half be confurmed; when almost cold, stir into it an ounce of flour of brimftone or stone brimstone in powder,"

Cut the hair off the mane and tail, and then curry them all over where the diffemper is, till the blood is almost ready to fart; then take a piece of fannel or woollen cloth, and daub the horse all over with the liquor a little warm, if the weather is not very hot.

This quantity will dress the horse all over twice; the second application may be two days after the first; or if the diforder is very bad, the next day following. This remedy will do for dogs, &c. See Leprosy.

dogs, &c. Sw LEPROSY.

MANGER. A wooden trough in
which horses corn is put, Mr. Williamfon advises a rack and manger for cows in the following words:

"I would by all means advice every farmer to have a rack and manger for his cows, with a loft over for hay, from whence it may be put down as for horses; and he will find that they will eat with more fatisfaction, and make infinitely less walte, than by the common method of laying it on the ground; the manger should be about feven or eight inches from the ground, and always be kept very clean by the

MANGROVE TREE, [Rhizophera.] This is a West-India tree, of which there are feveral species, but they will not grow upon land.

MANGROVE GRAPE. See Seafide

MANGO TREE, [Mangifera.] This plant grows naturally in many parts of India, and has by the Portugueze been trafplanted to the Brazils and other countries, where it grows to a large fize; the wood is brittle, the bark rough when old; the leaves are feven or eight inches long, and more than two broad; the flowers are produced in loofe panicles at the end of the

branches; these are succeeded by large oblong kidney-shaped plumbs.

This fruit, when fully ripe, is greatly efteemed by the persons who reside in the countries where it grows, but in Europe we have only the unripe fruit. Europe we have only the unripe fruit brought over in pickle; however, the

account

account given of the ripe fruit by those who have tafted it, has excited the curiofity of many perfons to procure young plants for their gardens in Europe, but hitherto without effect,

MANDOL, or MANIHET.

CASSADA.

MANNA. The juice of certain trees of the ash kind (growing in Italy and Sicily) either naturally concreted on the plants, or exficcated and purified by art. There are feveral forts of manna in the shops. The larger pieces, called flake manna, are usually preferred; though the smaller grains are equally as good, provided they are white, or of a pale yellow colour, very light, of a fweet not unpleasant tafte, and free from any visible impurities. Some people injudiciously prefer the fat honey-like manna to the foregoing: this has either been exposed to a moift air, or damaged by fea or other water. This kind of manna is faid to be sometimes counterfeited by a composition of fugar and honey, mixed with a little scammony: there is also a factitious manna, which is white and dry, faid to be composed of fugar, manna, and fome purgative ingredient, boiled to a proper confiftence; this may be diffinguished by its weight, folidity, untransparent whiteness, and by its taffe, which is different from that of manna,

Manna is a mild, agreeable laxative, and may be given with fafety to children and pregnant women: nevertheless, in some particular constitutions, it acts very unkindly, producing flatulencies and diftention of the vifcera: thefe inconveniences may be prevented by the addition of any grateful warm aromatic, Manna operates fo weakly as not to produce the full effect of a carthartic, unless taken in large doses, and hence it is rarely exhibited in this in-tention by itself. It may be commo-diously dissolved in the purging mineral waters, or joined to the cathartic falts, fena, rhubarb, or the like. Geoffroy recommends accuating it with a few grains of emetic tartar: the mixture is to be divided into feveral dofes, each containing one grain of the emetic tartar: by this management, he fays, bilious ferum will be plentifully evacuated, without any nausea, gripes, or other inconvenience. It is remarkable, that the efficacy of this drug is greatly promoted, (if the account of

Vallifnieri is to be relied on) by a fubstance which is itself very flow of operation, cafia.

MANURE, This term comprise all forts of dungs, composts, and other materials proper or used for the im-provement of lands. See Dung, Con-

POST, &cc.

Manure, therefore, is necessary to a foils, to repair them when exhaufted by the growth of vegetables, and to cure the defects of foils naturally bad, fuch as to enrich and fertilize very poor land; to render very frong or flub-born land more light, loofe, and plfable; and to render very light, loofe, dry foils, more compact and moift; and wet land dryer, &c. Strong moift land is the most improved by light manures, to open and loofen it: ver light land by the more heavy and moil fort of manure; and wet land by dry Some foils requi light composts. manure annually, others but once in

two or three years.
All forts of horfe-dung, neats-dung, hogs-dung, farm-yard mulch, or a mixture of all or any of these together, suits almost all forts of land; or a compost of any or all of thefi chalk, lime, earth, mud of ponds an ditches, cleanfings of streets, ash rotten tanner's bark, rotten wood, a faw duft, rotten vegetables, &c. or fuch of any of these materials as can be had. and formed into a compost-heap to rot together, make a good manure, both for corn and grass-land.

Rotten tanner's-bark alone, or in compost, is good manure for frong, cold, corn-land; and will also fuit grass, if applied the beginning of win-ter, for the rains to wash it into the ground.

Rotten wood, and rotten faw-duft, is very proper for strong land.

Rotten vegetables, fuch as all forts of weeds, and the refuse of the kitchen garden, &c. laid in heaps, and if mixed with mud or any earthy fubstance, and the whole lie to rot, they will make a

tolerable good manure for corn-land.

Green fern mowed down and laid in heaps to rot; is also used as manure.

Marle, chalk, lime, &c. properly prepared, either alone or in compost, are greatly used in many places as a dreffing for corn-land,

Sea-fand and shells, &c. being full of falts, are fometimes used as manure for ftrong clayey and stubborn loamy

"Sea-weed is likewise employed as manure, and being full of salts, greatly

improves corn-land. Afhes of all forts prove excellent manure, especially to all strong cold or moift land; but coal athes are superior to those of wood, or any other kind of vegetables; the farmers in the counties round London have experienced this, and they fetch them from that city by cart and waggon-loads, twenty or thirty miles distant; for in London they in general using coal-fuel, prodi-gious quantities of ashes are daily made, and collected in carts and carried to the ash-hills in the environs of the city; where numbers of people are employed in fifting them, and fell the ftings by the fack or load to the farmers for manure; also to the brick-

brick-earth.

Bones of animals are also used as manure for ploughed-land, where they are to be had in due quantities, as about London and other great cities.

makers for tempering their loam or

Soot is also used as manure to sprinkle thinly over corn-land.

Malt-duft, containing a natural heat and fweetness, proves an eligible manure to most forts of land, but more particularly to stubborn, clayey, and four harsh foils.

Cleaning of Arrets laid in compostheaps with horse-dung, &c. makes excellent manure both for corn and grass-

All manure for ploughed or digged land, should be applied at the time the ground is to be tilled, and not spread about any long time before it is ploughed in, especially in hot dry weather, which would exhaust the salts, and other enriching particles; observing however, where any hard substances, as marle, chalk, shells, &c. are used for manure, it is proper to spread them abroad some considerable time, exposed to the sun, rains, and frost, to pulverize, before they are ploubged into the ground.

The manuring grafs land should generally be performed in autumn, about Michaelmas, or a little before or after, and not in the heat of summer, as is often practised, whereby the sun's heat greatly exhausts its moisture and goodness; but when done in autumn,

omegines afed as manare

the rain foon washes the enriching particles into the ground, to the great benefit of the grass, and encrease of the future crop.

MAPLE TREE, [Acer.] The fpecies are, 1. The greater maple or fycacamore tree; this is a large growing tree, and adapted to encrease the variety in our woods and fields. It is very proper, if kept down, for underwood, because it shoots very fast from the stool, and makes excellent fuel. There is no tree more proper than this to form large plantations near the fea; for the fpray, which is prejudicial to most trees, seems to have no bad effect upon it. 2. The fmall or common maple; this does not grow to fuch a large fize as the fycamore, though its timber is of greater value. The timber with us is deemed excellent, and is used for several curious purposes, such as mufical instruments, inlayings, &c. For the making of turnery ware also, fuch as dishes, bowls, trays, &c. it is fuperior to most other wood. 3. The Virginia ash-leaved maple: This is a quick grower, arrives to a large timbertree, and is admirably adapted to cause a beautiful variety in our woods; though is not proper to be planted in exposed places, the branches being subject to split when attacked by violent winds, The leaves are of a pale green colour, moderately large, and fall off pretty early in the autumn. The timberis extremely uleful for turners; and like the Norway maple, ferves all the purposes of the sycamore. It is propagated by faving the keys, which this tree, though a native of Virginia, perfects in this country. It is also propagated by layers, or by planting the cuttings, in a moift fituation, in autumn: 4. The Norway maple with plane-tree leaves: this maple will grow to a great timber-tree, and therefore should be raised to encrease the variety in our plantations. The leaves are of a thining green colour, look beautiful all fummer, and die to a golden yellow in the autumn. This tree perfects its feeds with us; fo that it may be raifed in the same manner as the sycamore, from the keys. It may also be propagated by layers and by cuttings; which if planted in a moift foil in the autumn, will grow, 5. The scarlet flowering maple of Virginia; of this there are two forts, Virginian scarlet-flowering

maple, and Sir Charles Wager's maple, Both of these are propagated for the flowers, which are of a fcarlet colour, and come out early in the fpring. 6. The American fugar maple; this has fome refemblance to the Norway maple when the plants are young; but as they grow up the leaves are more deeply divided, and their furfaces less smooth, so that they are easily diffinguished. From this tree the inhabitants of North-America make a very good fort of fugar, in large quantities, by tapping the trees early in the fpring, and boiling the juice, which, by the utual process, is converted into fugar. 7. The mountain maple of America: the body of this tree is flender, and is covered with a whitish bark. It sends forth several red branches, and grows about fifteen feet high. 8. The Italian maple: this is very common in most parts of Italy, but particularly about Rome, where it is one of the largest trees of that country, and is esteemed for the fize of the leaves, which are large, affording a great shade: fo that these trees are frequently planted by the fides of roads and near habitations. 9. The Mont-pelier maple; the Montpelier maple grows to about twenty feet high, and is a very beautiful tree. 10. Cretan maple with three entire lobes to the leaves, which are fomewhat hairy on their under-fide: this grows to about the height of the former. The leaves are downy, composed of three lobes, and grow opposite to each other on long downy foot-stalks. The flowers come out in the fpring, and are very feldom succeeded by good seeds in

England, Maple and fycamore are best raised from feed; but as the feeds of the foreign kinds do not ripen in this country, they should be procured from abroad. In a cool and shady part of the feminary let beds of fine mould be marked out about four feet in breadth, and with proper alleys. Upon these let the foreign feeds be regularly fown, fifting over them about half an inch of the finest mould. When the plants come up, they should be kept clean from weeds, and frequenly watered; and this work must be duly attended to all fummer. 'The fpring following, the strongest may be drawn out, and planted in the nursery, in rows two feet afunder, and at the distance of a

foot from each other in the rows, leaving the others in the feminary to gain strength. The succeeding spring they must receive the same culture; and they may remain in the nursery, with no other trouble than keeping the ground clean from weeds in the summer, digging between the rows in the winter, and taking off all strong and irregular side shoots, till they are planted out for good.

for good. Notwithstanding these are the general laws of raifing all the species of maple from foreign feeds, the culture va-ries with respect to the scarlet flowering kind, when the feeds are gathered at home. This species brings its 'and to maturity the beginning of our gardens. They should be then gathered, and after having lain a few days to harden, they should be fown in beds of the finest mould, and covered only a quarter of an inch deep. The beds thould be hooped, and covered with mats in (corching weather; but when it is rainy and cloudy, they should always be uncovered. In about a month or fix weeks many of the plants will appear; but the far greatest part of them will not come up till the following spring. When the summer-plants ing fpring. When the furnmer-plants first shew themselves, they should hardly ever seel the full beams of the sun. The seeds must be constantly covered with the mass in the day-time, unless cloudy and rainy weather hap-pens, when they should always be uncovered; during the night no mats must be put over the plants, that they may have all the benefit of the refreshing dews, air, and cooling showers, When these latter do not fall, watering must be duly attended to; and this is all the trouble they will require for the first summer in the seed-bed. The fummer following they may be exposed to all weather, when they will only require being kept clean from weeds, and watered in dry feafons. The fucceeding fpring the strongest may be set out in the nursery-way, like the former feedlings.

By layers also all the species of this genus may be propagated; though that method is never practifed for the common maple and the sycamore. The young shoots may be laid down in the autumn, winter, or early in the spring. By the autumn following they will have struck root, and become good plants;

when the strongest should be fet out in the places where they are to remain; whilft the weakest may be planted in the nursery, like the feedlings, for a year or two, to gain firength.

Maples raifed from feeds will grow fafter, and arrive at a greater height, than those raised from layers; but they will not produce such quantities of flowers; which makes the latter method more eligible for those who want

these plants for a low shrubbery.

By cuttings also these trees may be propagated: but this method is chiefly practifed on the afti-leaved and Norway maples, which more readily take root The cuttings should be the this way. The cuttings should be the bottom parts of the last year's shoots: they should be taken off early in October, and planted in rows in a moift shady place. The spring and summer following they must be duly watered as often as dry weather makes it neceffary, and be kept clean from weeds. By the autumn they will be fit to re-move into the nursery; though, if the cuttings are not planted too close, they may remain in their fituation for a year or two longer, and then be fet

out for good, without the trouble of previously planting them in the nursery.

Maples may likewife be propagated by budding, grafting, and inarching: but the other methods being more eligible, these are never practised, except for the variesated forts, especially the for the variegated forts, especially the

large broad-leaved kind.

In order to propagate the varieties by budding, let fome plants of the common sycamore, one year old, be taken out of the feminary, and fet in the nur-fery in rows a yard afunder, and the plants about a foot and half diffant from each other in the rows: let the ground be kept clean from weeds all fummer, and be dug, or as the garden-ers call it, turned in, in the winter; and the fummer following the flocks will be of a proper fize to receive the buds, which should be taken from the most beautifully striped branches. The best time for this work is August, because, if it is done earlier, the buds will shoot the same summer; and when this happens, a hard winter will infal-libly kill them. Having, therefore, budded your stocks the middle or latter end of August, with the eyes or buds fronting the north, early in October take off the bass matting, which before

this time will have confined the bark and pinched the bud, but not so as to hurt it much. Then cut off the stock just above the bud, and dig the ground between the rows. The fummer fol-lowing keep the ground clean from weeds; cut off all natural fide-buds from the flock as they come out; and by autumn, if the land be good, your buds will have thot forth, and formed themselves into trees five or fix feet high. They may be then removed into the places where they are defigned to remain; or a few of them only may be drawn out, leaving the others to be trained up for larger standards, to serve for planting out in open places, or fuch other purposes as shall be wanted.

MANOR. An ancient royalty or lordflip, with demefines, &c.
MARACOCK. Paffion flower.
MARCHES. The bounds between England and Wales, or England and Scotland.

MARGUERITE. Dailey. The female of the horse, MARE,

See Horsz

MARKING Sheep. This is done with a marking iron, either of the letters of the owner's name, or of some other device, dipped in hot pitch or tar, and clapped on some part of the sheep, to make them be known; some mark them with ruddle; but both these methods are liable to great objection: the pitch and tar spoiling a great deal of wool, and the ruddle washing out.

MARJORAM, [Origanum.] species, 1. Pot or common marjoram. 2. Winter fweet marjoram, 3. Annual fweet marjoram, 4. Dittany of Crete. 5. Marjoram of Mount Sipylus. 6. Cretan marjoram. 7. Smyrna mar-8. Egyptian marjoram. joram.

The first three forts have great merit as culinary aromatics for the kitchengarden, and may also be introduced in the pleasure-ground, in patches in the open borders to increase the variety, and for nofegays, &c. the variegated perennial marjorams in particular have a pretty effect; they are all eafily raised from feed in the open ground in fpring, and the perennial forts also by dividing the roots; all of which forts, both perennials and annuals, when defigned for the kitchen garden, should generally be disposed in four feet wide beds, the perennials in rows a foot afunder, where they will abide for years; and

the annual fort being always raifed from feed annually, it may either remain where fowed, or the young plants may be planted out in rows fix or eight inches diffant; and when defigned to have any of the forts in the pleafure gaarden, difpose them about the garden in patches.

in patches.

The last five species, being exotics from warm countries, require shelter here in winter, so must be potted and placed in the green-house collection, or may be preserved all winter in a common garden-frame, furnished with lights to put on in nights and cold

weather.

Their different methods of propagation arel: The hardy perennial species by seed and by slipping the roots; the annual fort only by seed annually; and the five green-house kinds principally

by flips and cuttings.

Sow the feed in fpring, March or April, in any bed or border of light earth, and rake it in with a light hand; they will foon come up, and when the feedlings are a few inches high, plant them out in moist weather, in rows ten or twelve inches distant, finally to remain, giving occasional waterings till fresh rooted.

Autumn is the best season for parting the roots, though it may also be performed successfully in spring. Having some large plants, slip or divide the roots into slips, each furnished with fibres; which plant in rows, as directed for the seedlings, giving occasional waterings, and they will readily grow, and become good bushy plants

by autumn following.

Their general culture is the keeping them clean from weeds; every autumn cut down the decayed stalks, loosen the earth between the plants, at the same time digging the alleys, spread a little of the earth over the surface of the beds.

When any are intended for the pleafure-garden, remove them in autumn or fpring, with little balls of earth about their roots, and plant them where wanted.

All the green-house kinds are propagated by slips or cuttings of the young shoots in spring and summer. If you plant them early, let it be in pors, and plunge them in any hot-bed, they will readily take root; but if in summer, they may be planted either in pots, of in a shady border. In either made of

planting, give water directly, which repeat as occasion may require in moderate quantities; and if those that are
planted in the open air, either in pots,
or in the full ground, are covered down
with hand-glasses, it will facilitate their
rooting; but the glasses must be removed when the plants begin to shoot at
top. The plants in either way will be
rooted the same year, and towards autumn may be potted off separately into
small pots, and afterwards managed as
other hardy green-house exotics.

MARLE. Marie is a treasure to

MARLE. Marle is a treasure to the farmer wheresoever it is found, and there is no country in the world where there is more of it than in England, yet there are sew places in which it is known to lie. The industry of those who deal in husbandry has not been in any thing so slack, as in the searching after this valuable commodity.

We shall endeavour to awaken them to a sense of their interest, by shewing its value: and to affist them in the search after it we shall endeavour to make it known to them by sight and feeling in its several appearances, for these differ greatly. After this, to prevent mistakes in the application, the several kinds of marle shall be diffinguished, and the particular kind of land shewn, to which each properly belongs.

In order to the husbandman's finding marles upon his land, he must first have some knowledge of them. The very finest kinds have often been thrown up accidentally in digging on other occasions, and no one has known them. The fields have languished for want of what they contained in their own bowels through the ignorance of their owner.

Marle is of feveral kinds, and differe greatly in appearance; but to bim who will carry a general knowledge of it in his head, it may be always known in whatever form it is found.

Marle, like other earths, may be pure or foul: for those beds of matter which lie in the earth are subject to mixtures as those on the surface, tho not so frequently: and the deeper marle lies, the purer it usually is.

We shall first then divide the marles

We shall first then divide the marles into two kinds, the pure and the mixt. The pure marles all agree in their texture; their difference being only in the degree of hardness, and in the colour.

Pure

Pure marie is a fundance not unlike fuller's earth; it is for and fatty to the touch, it is not tough like clay, nor dufty like other, nor fandy like loam, but is of a tender fine nature, unlike

Mi other forts of earths.

o'When a farmer finds a piece of earth of this kind, whether it be thrown up in digging a well, or by whatever other accident, let its colour be what it will, he may depend upon it it is a marle. In order to be more confirmed, let him throw a piece of it into a bason of water, and he will find it swell like fullers earth, and crumble in the same manner of itself to pieces. The harder and more compact kinds break slower, the fost and loose ones quicker, some almost immediately. But in whatever manner it happens, this joined to the others is a sure proof that the earth under examination is a marle, and let him who has fallen by chance upon a piece of it, dig in search of the treasure.

Of the pure marles there are four principal kinds, diftinguished according to their colours. A white, a yellow, a red, a blue, there is also a black,

but it is less common.

Thefe are to be diffinguished under the name of pure martes of those colours; for there are foul and coarier

kinds of the fame colours

There are found in different places marles of these several colours, varying in their texture and hardness; but in general, the white or whitish are the soften and lightest, and the blue are the sirmest and heaviest. For this reason the white is generally used for pasture grounds, and the blue for corn lands.

This cuftom however is not to be established into a law to the farmer; though in those counties where they have choice, they use the fostest martes for pasture, because they distolve most freely: and the harder for ploughed lands, where they are more assisted by tillage. The farmer who has either of these kinds, may use it indifferently on both occasions, in this manner.

of the compact forts, let himlay it upon his corn land early in the feafon, that the weather may mellow it before the last ploughing: if it be for passure ground, let him in the same manner lay it on in time, spreading it thin. If it be the white, or any other of the loose and crumbly kinds, it need not be laid

on either till late, because it breaks and dissolves almost as soon as it is exposed to the weather.

The colour of marle is no certain

The colour of marle is no certain proof of its compact, or crumbly nature; but in general, the blue is firmeft, the white foftest, and the red and yellow are of a middle degree between

both.

Those already named are the richest and sinest of the marles: and as all mixture debases their value, among the other kinds, which we shall distingish by the name of impure or mixed marles, the most impure are constantly of the least value. These mixed marles differ not only in colour, but in their very nature, according to the substances which have got in among them. Their colour is no general mark of distinction, but they may be very well arranged under separate heads, according to the substances of which they partake. These being sand, clay, loam, or stone, they may be considered as sandy marles, clayer marles, loamy marles, and smong these last are also to be comprehended some which have affirst the hardness of a stone from their own nature and composition, though they have not a particle of real stone in them.

in them.

Many maries also, beside these natural eartha and stony matter, contain great quantities of sea-shells which are preserved in them in a singular manner; for instead of being petristed, or rendered hard, they are made brittle, and seem as if they had been calcined. These shells are far from injuring the marle in its improving quality; they on the contrary, are found to encrease

that virtue.

There are of these several kinds of all the before-mentioned colours, but greyish or yellowish are the most frequent. The sandy kinds are therichest of these impure ones; and they are sittlest for ready use, for they break to pieces in the hands easier than any others, and crumble the soonest of any with the weather. In a proper application these may be accounted of equal value with any, for on clayey lands the yery sand which is contained inthem is useful.

The loamy marles are the next in value among these to the sandy, for they break easily with the weather; but in these as the former, a great deal

of the advantage arifing from the ufe of them will depend upon a proper knowledge of their nature, and their

use on a right soil

The clayey and stoney are inferior to the others : but on some lands the former are preferable to those which are more pure: and amongst the stoney kinds there are some, and they even of the hardest, which, when properly mellow'd by the weather, are inferior to none in Richness. Some of these a large hammer would make no impression upon when first dug up, but with frost, rain and fun-shine, they have in fix months time crumbled away to powder.

Some of these, when broken with great labour, and laid upon the lands, have for feveral months appear'd like fo many stones scatter'd over the fields, and feem'd to damage rather than improve them: but after one winter there has not been a piece of any one of the lumps fo big as a nutmeg to be found: and the land has been kept in heart eight or ten years by that

fingle dreffing.
As the confiderate hufbandman must fee the vast value of Marle, it is natural that he should bethink himself of feeking for it on his own grounds; we shall therefore not only encourage, but

affift him in the fearch.

In the first place he has this to tempt him to examine his land in hope of it, that it is frequent in many places where it is not regarded or even known: and that although so little observed, it is a commodity to naturally and generally the produce of England, that there are few pieces of land of any extent in which one kind or other of it may not be found,

If it be too deep indeed, it may not be worth taking up, but that is feldom the case : it is commonly near the

furface.

The feveral kinds and varieties of marle have been fo fully described, that the farmer has all the reason in the world to suppose he shall know it at . fight : we shall add to these the soils un-

der which it usually lies,

But prior to this, which beginning without any certain information, is a more random kind of fearch, we would have him examine well both by report and by the appearance of the ground, whether marle has ever before Vot. II.

been dug in his Land, or any where near its borders,

If he hear that it has, let him look narrowly after those broad and shallow delves in the ground which have been before mention'd, for they are certainly the places where the pits were. If he can learn no such thing by report, yet let him fee if there be any fuch hollows in the ground, for the less certain, still they are an evidence that fomething has been dug. It may have been gravel, but marle is more likely.

When he has found any fuch hollows, let him mind the course wherein they run, for that way probably the

vein of marle runs alfo.

If he find only one fuch, let him first observe how deep it is; for on this depends the nature of his search, since by this he may guels weether the marle

lay low or near the furface,

His business is to try all about the place where the hollow is, for marle. If that hollow be very shallow, let him have holes dug the depth of three feet with a spade; if deeper, let him use an augur, such as they bore the ground with on various occasions. Let him bore in a great many places to the depth of fix feet; for if the marle lie deeper than that, 'tis hardly worth his digging; but let him examine firstly every thing the augur brings up within this depth. Let him keep in his mind the various kinds of marle, and if any thing come up that has the least appearance or resemblance of any of those several kinds, let him try it by feeing if it moulders away in a bason of water, if it crackles on being put into the fire; and what effect the fun and air take upon it when it has lain two or three nights exposed.

By these means, if there ever have

been marle dug there, and the vein of it continues, he will be fure to find where it runs; and he is then to follow the course of it by the augur, and confider where he can open a pit of it the most conveniently for the general

use of his land.

But suppose there be not the least fign upon the ground, or the least account from report that marle ever was dug any where thereabouts; yet this should not discourage him from enquiring if there be any; for there is a time for the discovery of every thing.

In this case he must first have recourse to what he can see upon digging any where. If a well be funk at any time upon or near his land, let him look carefully over all the kinds of earth that are thrown up. Nay, if a pond be dug, let him make the same observations.

Let him examine the fides of ditches new dug or cleaned; and follow the plough with a careful eye, lobserving if it any where torn up matter different from the foil. For marke often is within the reach of the plough.

If he discover nothing of the nature of marle in all these researches, let him have recourse to the augur, boring in different places, but chiefly in the clayey soils, for under these the marle oftenest lies.

The mellow earth is the next foil that is likely to conceal marle: and after this the loamy earth. It fometimes lies under gravel, but feldom in any great plenty: it very rarely is found under a fandy foil, and then commonly in a thin vein, and at a great depth.

The clayey foil not only oftenest has marle under it, but that which lies under this soil is usually of the finest kind. The Kentish marles generally are covered with a foot or two of tough clay. In general it is the finest, purest, and richest marles the farmer is to expect under a clayey soil.

It has been observed, the fine black mellow earth of the low lands commonly has under it a bed of tough clay. Sometimes it has a think bed of some fine marle, particularly of the reddish kind, in the place of the clay; and very often a vein of marle comes between the clay and the mould.

The former is the best for the farmer; but if the latter presents itself, let him follow with his augur the course of the vein, and he will find it gradually thicken till at last it usually takes the place of the clay. It is here he is to open his marle pit; and he will often fall upon a bed of marle five, six, or seven feet thick, rising within a foot and half of the surface of the ground.

Sometimes the stony marles are found under clay or black mould, but it is more commonly the pure, fatty, and tender fort: as to those found under sandy soils, they are usually one or other of the clayey marles, and, with

double expence in digging, are not of half the value,

There are fome parts of Suffex where a bed of marle comes up within eight inches of the furface, and when open'd is found to be ten or twelve feet thick, all of fome one of the pure and fine kinds: and in Chefnire, and also in Lancashire, where the best marles of ten lie under the fine black mould, a bed of blue marle has been within a yard of the turf, down to four yards deep, and they were not then got through the vein.

When the farmer has by the methods already described found out a vein of marle, and fix'd upon a convenient part of his land for opening of a pit; let him begin by marking out a tolerable large place for the work; and for a proper way for the carts that are to fetch out the marle. A great deal depends upon all this being well ordered, and now is his time for contrivance.

He is then to employ his labourers to clear away, with pick-axe, fpade, and wheel-barrow, all the foil that covers the vein of marle, and when this is done, they are to begin digging it.

it.
The different condition of the marle will now be found, and the necessary accidents of treating it. Where it is of the finest and tenderest kinds, they often work with a kind of hoe, and three hoers will tear up as much as four can fill into the carts.

In the clayey kinds they use spades for digging, and then the diggers must be more than the fillers. Sometimes these are so dry and tough, that the workmen must have water brought to them to wet their spades; and in other places they are so wet, that there must be a pump set up to keep them

dry.

When the marle is got into the cart, it is to be shot on the fields; but this in a different manner according to its nature. If it be of the sine soft tender kinds, the best way is to spread it as it is taken out of the cart: but if it be of the stoney or other compact kinds, every load had better be shot separately, and lest in a heap for the whole winter, that the frost and air may mellow and break it.

There are very few lands that may not be improved by marle, but fome require it more than others; there are also many kinds of marles, as well as many different forts of soils; and the marles of one kind are fit for certain lands, and those of other kinds for others. A strict regard must be had to this, otherwise, as already observed,

the land may be spoiled.

In some places they have a way of laying on such a quantity of the marle, that they may be faid to add a soil rather than to improve what was there before. This is the practice in some parts of Cheshire, where they will lay fifteen, fixteen, or eighteen hundred load of marle upon one of their acres; they will thus in digging and carriage bestow twelve or fifteen pounds upon marling an acre; and then they will work it with good management twenty or thirty years together.

For the first years they plough very shallow; they don't cut up more than an inch of the foil for fear of burying the marle; so going deeper in the following years. This is a particular

practice.

In the first place, the soil which requires marle most of all, and which is the most improved by it, is the sandy. The advantage arising from this practice upon such lands, is beyond the belief of any who have not seen the

The marle which is fit for this land is the clayey kind, and more than all others that brownish or yellowish marle, which looks like real clay in the pit, but is found of so different a nature when examined. This marle, or any one of the clayey kind, laid thick upon a fandy soil, gives it at once a body and a richness. The clay that is in it binding the light soil tolerably together, at the same time that the fatty and enriching earth blends itself with the whole.

This is the application of marle, in which its virtue is most fully seen: for by this means fand, that before would yield scarce anything, has been known to produce suprizing crops; nay, it has been try'd by way of Experiment, to marle one half of a piece of new broke-up ground of this fandy kind, and leave the other in its natural condition; then both being sown with the same seed, the marked part has yielded a plentiful crop, when the other has not ripen'd one ear.

Another great advantage of this practice is, that in years wherein other crops fail, those succeed which are on these grounds even to admiration. Thus when there comes a dropping summer, while a piece of marked sandy foil is in its full sigour, the increase is predigious. These seasons generally hurt the crop on other lands; but they load these with as much as can stand upon the ground.

But all this time care must be taken that the marle be well suited to the soil; and this is to be done by this rule; the more sandy the ground is, the more clayey the marle must be.

If a rash young husbandman, hearing of the great profit that arises from laying marle on sandy soils, should without any farther thought lay on one of the pure sat and tender marles before described upon a very barren sandy piece of ground, tho' he put on a Cheshire loading, yet the wet would wash it in, and the sand would swall it in, and the sand would swall it up in such a manner, that the whole effect would be lost after all the labour and expence.

Next after the fandy, the foil which receives most advantage from marle is the loamy; and this admits the greatest improvement of all when the fand in its composition bears an over proportion to the clay. Some lands, the soil of which was fitter to make bricks than to yield corn, have been so improved by marle, that the corn has stood like a sward of grass at its first appearance; and has thriven so afterwards, that every stalk has come to a due maturity.

The marle for this kind of land must

The marle for this kind of land must be the purest and finest that can be had. If the farmer should lay on a clayey, or a fandy marle, he would only increase the proportion of one or other ingredient of the natural land, which already made it harren.

which already made it barren.

All that renders a loamy earth at all freitful in its natural ftate is the quantity of mould that is mix'd in it; now a fine marle is of the nature of that mould, only much richer: it blends among the loam, and the firmness of the loamy foil holds it till it has yielded all its virtue.

Of all the kinds of marke, that which agrees best with a loany foil, is the blue, pure, and tender marke. After this the best is the yellow? but any

marle that is light and free from mixture will answer the purpose.

The stony marles have been try'd in some counties upon their loamy soils with tolerable good success; particularly that fort they call shale marle, laid on a tough loamy soil, abounding naturally too much with clay.

This has succeeded but poorly at first. The first year scarce at all, the second somewhat better, and the third and sourth best of all. The pure marle is very much preserable for this soil to the story. The farmer may do well to use any of the story kinds when he cannot get the other fort in the neighbourhood, and he will reap considerable advantage from it; but when he can have his choice, the pure marle is preserable for this land by many degrees.

Some of these stony marles, not of the hardest kind, have been used on fandy soils, but without any great

fuccess.

The practice of marling lands is founded upon reason; and that, as well as experience, will shew in what manner it should be done. The pure marles are all fatty; the mix'd kinds are either clayey, fandy, loamy, or stony; now upon confidering this, the

application is easy.

After fandy and loamy foils, that which receives most advantage from marle is mellow earth: this wants improvement less than any other kind, but the proper use of marle adds to its fertility; and there is this farther advantage, that there is scarce any kind of marle whatsoever but may be used to it: but still there are some from which it has more benefit than others.

Ploughed land, meadow, & pasture, when they have this mellow earth for their soil, equally receive good from marle. As to grafs lands, only the pure marles should be used to them, because they wash in readily, and don't lie about in clots or lumps upon the ground. For plough'd lands of this soil, any of all the kinds of marle may be used with benefit. If they be of the clayey fort, they break in with ploughing after a little time; if loamy, they blend so much the sooner; if they be of the stoney kind, it takes time for the weather to divide them, but they do very well at last; and finally, if they be of the pure or of the sandy

kind, they break with the first dreffing, and wash in with the rains immediately.

As to chalkey foils, marle is not the manure most suited to them of all others, because marle is itself in some degree of a chalkey nature: nevertheless, it is to be used with prudence

to good purpofe.

Gravelly foils have the same advantage from marle as the sandy, and one reason of this is, that they always have sand among the gravel. These let all other manures be wash'd through them by the first rains, but the marles of a proper kind remain in them. They not only enrich those lands by their own mellowness, but they give them a firmness that will make them hold other dressings. Dung laid on a loose gravelly soil is lost and swallow'd up without any benefit, but dung upon such a land that has first been dressed with marle, takes the same effect as upon other soils.

In this, as in all the other inflances, care must be taken to suit the marle to the soil; if a pure marle were used, it would be washed through quicker than dung; and if a sandy marle were chosen, the marley part of that mixture would be wash'd down through the soil, and only the sand that was among it would remain. This could be no improvement to a soil already

too fandy.

The proper marle for a gravelly foil is the clayey fort. This is the only kind that is proper; and this never fails of giving the greatest advantage.

Last of all, we come to speak of the clayey soils, which are in general supposed to be improper for marling to a proverb. Every common farmer can repeat what is retailed from one to another through all the common writers on husbandry, and can tell his son,

He that marles Clay, Throws all away.

And this he thinks he has two substantial reasons for believing to be true, because it is verse; and because it is in print. But let not the reasonable husbandman be frighted out of his profits by rhymes.

It may be poffible enough to throw away cost and labour by laying an improper fort of marle upon a clayey

ground;

faid of any other. But the business of that what was written of the profit the present enquiry is the suiting the by marle was not true. In Cheshire, marle to the land; and when that is observed, the same benefit will follow from the use of it on these, as on all

other foils.

Excepting the clayey marles, there is no kind of them but is good on clay grounds. In the first place, all the pure marles being well worked in by the plough, blend with the foil, and loofen and enrich it. The stoney kinds are kept on or near the furface till they mellow and break, and the firmness of the ground takes in all their benefit : the loamy marles, if there be too much clay in them, are to be rejected as approaching to the nature of the clayey kind, but if otherwise, they are excellent, as they approach to the nature of the fandy ones. These lastmentioned are for clayey foils the best of all, for they confit only of a fine fatty marle and fand, and they act doubly upon the clay, at once loofen-ing and enriching it. As foon as they are laid on, they break and crumble to pieces; for the fandy marles are the brittlest of all the kinds; and thus separated, the fand gets into the clay, and makes way for the marle, which the rains wash thoroughly in, and which is then detain'd among it to exert the full effect of its fertility.

He therefore that has a clayey foil to manure, and can get at a fandy marle, has it in his power to raife his land to many times its original value.

Having taught the practical farmer to know marle when he fees it, how to feek for it on his own grounds, and in what manner to fuit the kind to the nature of the land; it remains to instruct him in the manner of using it.

For this is no little article, and in this the experience of others only can be his guide, comparing their success one with another; for not only the practice of a particular county may many times miflead him; but what has been written under the appearance of advice is too often false.

As to the quantity that he shall lay upon hisland, fo many errors appear on both fides, that the truth feems hard to hit. Some of the Staffordshre farmers lay on so little, that it scarce answers any purpose. Some of these with the best management will not do are contented to use twenty loads to much fo foon.

ground; and the same may be as truly an acre, and then they have complained on the contrary, they bury their land under fuch loads, that they feem to fow their marle and not their ground,

The medium between these practices is the right method; and he who would reap all those advantages that have been declared of marle, must follow that course. The right use of marle is not to put it in the place of the foil, but to make a mixture of it with the foil, fo as to raife a poor land into the condition of one naturally rich: to do this, a due quantity of the marle must be employ'd; and to give a general rule, that should be about a hundred loads to an acre.

The best way of fowing marled land is in general under furrow.

The farmer is not to look for the full effect of this the first year, but it will last as before observed: and the continuance will be according to the nature of the foil, and the kind of the marle, feven, ten, twenty, or even

thirty years.
When the farmer fees his land that has been marled after fair weather look all over white, as if covered with a hoar frost, he may conclude it will answer his best expectations. It is a proof that the marle was good in itself; that it has been used in due quantity; and that it is well mix'd with the land

Some have delivered this white appearance as a mark that there is marle in any part of the land where it is feen ; but marle cannot discover itself in that manner in its natural beds, unless they lie almost close to the surface. It i therefore of little use in that respects but on the lands where it has been laid, when there is this appearance, 'tis certain-that it is mix'd and mellow'd in the ground.

If the hard and stony kinds are used, they must be laid on early in the season: if the clayey a little later; the loamy may be a little later yet than the clayey: the pure marles of all kinds, and the fandy marles, are to be laid on very late. In this the farmer's discretion will direct him after these general rules. The proper timing of the laying on this dreffing regards its effect for the enfuing year; but the harder kinds

The last method of laying on the marle is, to shoot the several loads, as they are brought out of the pit, at about equal distances one from another; and then to spread them all. This will occasion the ground to be all cover'd with the same thickness. When it is thus spread, it must be will mix'd with the foil, and all laid fmooth and level together: and the quicker this is done from the time that the marle be taken out of the bed, provided it be a pure or a fandy marle, the better; for as these crumble to pieces almost directly, the bufiness is to get them mix'd in the ground at once, that they may begin to break among it, and so per-fectly make one body of the whole: for this is the nature of an improvement by marle.

If the field to be maried lie level, the marle is to be spread evenly over it, not thicker in one place than another: but if it lie upon a descent, the best way is to spread the marle half as thick again on the higher part of the field as on the lower, for the rains will wash enough of its best part down to

make all equal.

It is impossible to give one and the fame direction for all lands, as to the times of marling, and what may be reasonably expected from them, for the nature both of the marle and of the foil make an endless variety; but the farmer will fee by his crops when the land needs to be refreshed.

MARCH. The third month of the

year ;-in which the

Products of the Kitchen-Garden are,

Winter spinage, cabbages sprouts, brocoli, favoys, coleworts, red beets, carrots, parfnips and turnips.

Upon the Hot-beds ; cucumbers, afparagus, peas, kidney-heans, pursiain, &c. And, on the warm borders, radishes, and young fallet-herbs; as also mint, tanfey, tarragon, &c. if planted upon a moderate not-bed the beginning of February.

Fruits still lasting : Apples, Loan's pearmain, nonpareil, golden ruffet, winter pearmain, Pile's ruffet, john apple, pomme d'api, golden pippin, Kentish pippin, Holland pippin, French pippin, Stone pippin, Wheeler's ruffet, with some others of less note. Pears: burgamot bugj, winter bon-

cretien, double-flowering Royel d'huyver, bezi de chaumontelle, l'amozelle, union or Doctor Uvedale's St. Ger-main, Parkinson's warden, cadilliat, with some others.

Plants now in Flora

Some anemonies, crocufes of feveral colours, double faow-drop, perfian iris, dens canis, crown imperials, fpring cyclamen; early, white, blue and flarry hyacinths, hepatica's, double pile-wort, narciffns's of feveral forts; early tulips, violets, primrofes, polyanthuses, green-flower'd black hellebore, fennel-leav'd black hellebore, wallflowers, double diffies, some auricula's, dwarf Portugal navel-wort, with many others of less note.

Hardy Trees and Shrubs now in Flower.

Almond-tree, double flower'd peach, virginian cherry-plumb, mezereons, fpurge laurel, laurus-tinus, Spanish travellers joy, cornelian cherry, ben-jamin tree, and some others.

Plants now in Flower in the Green-house and Stove.

Several forts of ficoides's; fome forts of aloes, fedum arborefcens, chryfanthemums, anemonespermes two or three kinds; germaniums, Aleppo cyclamens, polygała frutofcens; the ananas or pine apple, hermannia two forts; ilex-leav'd jafmine, Spanish

jasmine, with some others.

MARSHY LAND, Marthy land can be made little ufe of without first draining, therefore that bufiness should be immediately fet about by a good husbandman where it is practicable to be done, or where the expences of workmanship would not be more than equal to the profit; for a farmer above all men should be careful never to buy crops too dear, and on the other hand never let a too great covetoufnels prevent his applying all necessary ex-pences to the cultivation and improvement of his land .- A farmer from observation will easily comprehend the advantage from draining of marthy land, even from the ditches round his farm, which draw off the water from. his land, but are of themselves inadequate to marshes or even springs we must here have recourse to underground draining—the best materials required for this work, where they can be had at a reasonable price, are stones or brick, laid in such a manner as to give a free paffage for the current

of water; and to prevent the earth filling up the interffices, heath frould be put over the stones. If this be found unhandy, bavins or faggots may be used, covered over with heath or even fraw; the best kind of wood, perhaps, is holly, but where this cannot be had, oak, alder, &c. may be used. If there be a tolerable descent for the water to run off, the work will be eafy enough, but if that should not be the care, ditches must be made sufficient to answer the current of water drawn off, The upper part of the channel should be about 18 inches, and gradually decrease to four at bottom, where the stones are thrown in: if bricks or fquare stones are placed, they may be rather wider.

Land which was in the marshy or boggy state may, by draining, be made

good land.

If it is in fuch a fituation as to be incapable of being drained, it will in general afford a good deal of feed for cows in the fummer, but will be im-

proper for theep.

After the land is drained, it would be an exceeding good method to shave off the upper furface of the land, and dry it like turf, which should be burned on the fpot; this operation, which is called burn-baking, would be an excellent manure for the land, and destroy numberless plants which would be mischievous in a state of cultivation; -when this was done, we would recommend a crop of oats, and no fear of having a good one, if not fown too thick; after them a fummer fallow for turnips, and then the crops in courfe as the land may be adapted best for.

This land well managed afterwards will generally turn to very good account, and bear very confiderable crops for fome years without manure,

If it cannot be burn-baked; a crop of oats will answer very well without, but they will be apt to be very rank in fraw and thin in ear.

Beans planted at one ploughing have been known to produce five quarters to an acre; but whatever the first crop may be, we would recommend a failow the next year; not that the land wants reft, but that it will be necessary to destroy a number of unprofitable plants and weeds which may have taken fast hold of the ground. Chalk and lime

will be acceptable to this fresh turned up land, which must of course possess great degree of fournels from its nituation; they will correct that fournefs.

and fo do good.

The marsh-lands in Lincolnshire. and many other parts of England, produce a fort of grafs, which feeds sheep in a better manner than that of almost any other land, in regard to their fize. and the quantity of wool. The sheep about Grimfby, and some other places in this county, produce fuch lufty wool, or, as they call it, wool of fo large a flaple, that three or four fleeces usually make a tod of twenty-eight pounds weight. Several hundred loads of this wool are yearly carried from these places to Norfolk, Suffolk, and other parts of the kindom, for the cloth manufacturers. They fend this in large packs, which they call pockets, each containing about five and twenty hundred weight.

When margh-lands lie flat, it is neceffary for the owner to keep all the water he can from them, The fea-water in particular is to be kept from them as much as possible; and this is usually done at a very great expence, by high

banks and walls,

Two things greatly wanting in thefe lands, in general, are good shelter for the cattle, and fresh water. The careful farmer may, however, in a great measure obviate these, by digging, in proper places, large ponds to receive the rain water, and by planting trees and hedges in certain places towards the fea, where they may not only afford shelter for the cattle, but keep off the fea breezes, which often will cut off the tops of all the grafs in these places, and make it look as if mowed.

These lands fatten cattle the Conest of any, and they preferve theep from the rot. It would be of great advantage to them, if there were raifed, in the middle of every large marth, banks of earth in a cross, or in the form of two femi-circles, and these planted with trees; these would serve as a shelter for cattle, let the wind blow from what quarter it would, and would foon repay the expences of making,

There are, in different parts of England, very large quantities of land upon the fea-coafts that would be worth ta-

king

king in, though no one has yet thought of doing it. The coasts about Boston, Spalding, and many other parts of Lincolnshire, give frequent instances of this, where the fea falls from the land, fo that on the outfide of the fea walls, on the owfe, where every tide the falt water comes, there grows a great deal of good grass, and the owse is firm to ride upon when the water is upon it.

This owfe, when taken in, hardly finks any thing at all, and they dig the walls from the outfide of it, all the earth they are made of being taken from thence, and the fea, in a few tides, filling it up again: and though the fea, at high water, comes only to the foot of the bank, yet once in a year or two, fome extraordinary tides go over the banks, though they are ten feet high. These banks are fifty feet broad at the bottom, and three feet at the top; and the common price of making them is three shillings a pole, the earth being all carried in wheelbarrows, and the face towards the fea, where the greatest slope is, being turfed. MARSH ELDER. See GELDER

RosE. MARSH MALLOW. See MALLOW. MARSH TREFOIL. See Buck-

BEAN. See LILY. MARTAGON.

MARVEL of PERU, [Mirabilis.] There are three species, the common, the long-flowered, and the forked. They all flower in July, continuing in fuccession until October, very conspicuous and elegant. Having the fingularity of being shut all day, and expand towards the evening when the fun de-clines; hence the inhabitants of the Indies, where they grow naturally, called them Four-o'clock-flowers: their time of opening here, however, depends on the weather, for if cloudy, or that the fun is not very vehement, they often open great part of the day.

The flowers are univerfally hermaphrodite, and of one funnel-shaped tubular petal, baving the lower part a long narrow tube, and the upper spread-

Ing.

These plants are naturally perennial
however, if not prein root, which, however, if not preferved here in winter, prove but of one year's duration, but if sheltered from frost and wet during the winter feason, they will remain alive, and shoot out Arongly again in fpring: in this country,

however, the plants are commonly confidered as annuals; because they rise from seed in the spring, and the same year produce flowers and perfect feed i and if left to nature in the open air, totally perish in winter, at the first attack of frost or excessive wet; but, as aforesaid, if in autumn, when the stalks begin to assume a state of decay, the roots are taken up, and preferved in fand in a dry room all winter, and planted again in fpring, they shoot out afresh stronger than at first, and fometimes attain four or five feet stature, with very spreading heads; or if plants growing in pots, having the stems cut down in autumn, and the pots placed in a green-house, or gardenframes under glaffes, the roots may also be preserved found, and will shoot out again in spring as above.

The roots generally become large, tuberous, and fleshy, covered with a

All the species are of a tender nature, scarcely able to endure the open air here fully day & night, until May or June; that is, they being raifed from feed in fpring, chiefly in hot-beds under glaffes, continued & forwarded there until the beginning of June, then fully exposed in the borders or pots, they become large branchy plants in July and August; and continue flowering until October or November, till prevented by the cold,

They are all elegant furniture for the principal compartments of the pleafure ground, they being both very ornamental in the large branchy growth, closely garnished with leaves, and by flowering so numerously seem as if entirely covered with flowers, in constant plentiful succession from July till the

beginning of winter, as aforesaid.

The roots of all these plants are a grong purgative, and, given in a double quantity, operate equal to the true

jalap.

The propagation of all the species is by feed in the spring, either in a warm border, or in a hot-bed; but the latter will forward the plants to confiderably the earliest and greatest degree of perfection.

MARYGOLD, [Calendula.] The fpecies are, 1. the common marygold with great varieties, being all hardy annuals. 2. Cape leafy-stalked violet and white marygold.

marygold. 3. Naked stalked violet and white Ethiopian marygold. 4. Grass leaved low perennial cape marygold. 5. Shrubby cape marygold. The first sort in the common single slowered state is regarded only as a pot-herb, and its slowers are the only parts used; but some of the full double varieties and proliferous kinds demand attention also as ornamental plants for the beauty of their slowers, which will effect an agreeable diversity in the common compartments of the pleasure ground, in assemblage with other hardy annuals. Likewise the second and third forts,

Likewife the fecond and third forts, being hardy annuals, will flower abundantly, and form a good variety in the open borders in the months of June,

July, and August.

The fourth and fifth forts, grafsleaved and sarubby Calendula, producing many flowers in long succession, are also worthy of a place in our gardens: but being impatient of frost, must be kept in pots, to have shelter of a green-house or frame in winter.

All the annual forts are propagated by fowing the feeds in beds or borders in March or April, either in the places where they are to remain, or for

transplanting.

When intended to cultivate the first fort for culinary uses, many either sow the seeds where the plants are to remain, by broad-cast on the surface, and rake them in, or sow them in small shallow drills a foot as under, covering them half an inch deep, and when the plants in either method have leaves an inch broad, hoe them out to twelve inches distance; or they may be sown thick for transplantation, and when the plants have four or sive leaves, plant them out in rows the above distance.

Their flowers being the useful parts, they will be fit for use in constant succession from time to time in dry weather, and, after drying them in the shade, should be put up in paper bags

for ufe.

To propagate the annual kinds in general as flowering plants, fow them either in patches in the borders, &c. where they are to remain, fowing four or five feeds in each patch half an inch deep, but leave only one of the best of the plants in a place; or the plants may be raised in a bed or border, and when they have four or five leaves, Vol. II.

transplant them in the order just di-

They will flower and ripen feeds abundantly from June to the end of

The fourth fort is propagated by flipping the heads any time from March till September, planting them in pots, which, if plunged in a hot-bed, or in the common earth, and clofe covered with a hand-glass, and occasionally standed and watered, they will readily grow, hardening them gradually to the air.

The shrubby fort is propagated by cuttings of its branches, in pots of light earth, in April, May, or June, plunging them in a moderate hot-bed, or, in default thereof, plunging them to the rims in the common ground, giving shade and water.

African MARYGOLD. See AFRI-

CAN MARTGOLD.

Corn MARYGOLD. See CORN MA-

Fig MARYGOLD. See FICOIDES.
French MARYGOLD. See AVRICAN
MARYGOLD.

Marsh Marygold, [Caliba.] This plant grows upon moist boggy land in many parts of England: of this there is a variety with very double showers, which for its beauty is preserved in gardens, and is propagated by parting of the roots in autumn. It should be planted in a moist soil and a shady situation; and as there are often such places in gardens, where sew other plants will thrive, so these may be allowed to have room, and during their season of slowering will afford an agreeable variety.

SYRIAN MARUM, [Marum Syriacum.] This is a small shrubby plant,
growing spontaneously in Syria, Candy,
and other warm climates, and cultivated with us in gardens. The leaves
have an aromatic bitterish taste; and,
when rubbed betwikt the singers, a
quick pungent smell, which soon affects the head, and occasions sneezing;
distilled with water, they yield a very
acrid, penetrating effential oil, resembling one obtained by the same means
from scurvygrass. These qualities sufficiently point out the uses to which
this plant might be applied; at prefent, it is little otherwise employed
than in cephalic snuffs. It is propagated by slips or cuttings.

Common

Common MARUM, or MASTIC. This is a pungent aromatic plant, formerly in efteem as a medicinal, plant but now not much in ufe.

MASH. For horses, &c. an infu-fion of bran, malt, &c. steeped, and given as food when they are indisposed. MAST. See BEECH MAST.

MASLIN CORN. Rye and wheat

mixed together, MASTICK TREE, [Pifacia.] This is a pretty evergreen, requiring shelter all the winter, is propagated by layers in the fpring, and they will be well

rooted by the following autumn.

MASTICE TREE of Jamaica, A species of the Cornelian cherry.

Indian MASTICK TREE, [Schinus.] The species are, the Peruvian and the Brasilian. Both these species are shrubby, durable in root, and top, and retain their leaves the year round; and being natives of hot countries, require fhelter here of a good green-house in winter; or, if sheltered in a stove, two or three winters whilft young, it will be an advantage to the plants; however, they both facceed tolerably with the culture of common green-house exotics. They being pretty ever-greens, with finely pinnated leaves, merit a place in the collection of our tender exotics, in which they will effect a good variety; let them, therefore, be cultivated in pots of rich earth, and placed among the plants of the above department.

They are propagated by feed obstalled from abroad, also by layers and

to a Som the feeds in the fpring, in pots of rich earth, and plunge them in a

hot-bed, managing them as other ten-

der feedling exotics. foring will be well spoted in one year; and cuttings of the young shoots, olasted in (pring, in pots, and plunged in a hot-bed, will readily emit roots. a in fix or eight weeks,

MATFELON. Blue bottle. - MAUDLIN, [Achilles.] Yarrow, pailfail.

MAY. The fifth month in the year :- in which the inte

Products of the Kitchen Garden are, Radifhes, spinage, falleting of all forts, cebbage, brown dutch, Silesia tus, mallow-tree, Arbor Jude, cyti-and Imperial lettuces, asparagus in sus lunatus, scorpion sena, bladder sena,

flowers from under bell-glaffes, young carrots, artichokes, kidney-beans and cucumbers upon hot-beds; purslain upon warm borders, or on hot-beds, with most forts of spring herbs.

Fruits in Prime, or yet lafting.
Pears: L'Amozelle, or Lord Cheney's green, Parkinson's warden, burgamot de Pacque, Bezy du Chaumontelle, cadillac, with fome others.

Apples ; golden ruffet, stone pippin, John apple, oaken pin, pomme d'api, winter russet, and sometimes the nonpareil; May and May-duke cherries; and in a warm fituation, some scarlet ftrawberries; in the forcing frame, masculine apricots, nutmeg peaches, and some early plumbs.

Plants now in Flower, Late flowering tulips, anemonies, ranunculue's, pinks of feveral forts; lilly of the valley, double white narciffus, fea narcissus, tuberofe iris's of feveral forts; white and yellow afphodel, pulsatilla's, double rockets, pionies of feveral forts, corn-flags, yellow and and pompony martagons, English hy-acinths, starry hyacinth, hyacinth of Peru, blue grape hyacinth, feathered hyacinths, bulbous iris, blue aconite or monk's-hood, Tradescant's spiderwort, favoy ipiderwort, bulbous fiery lily, red day lily, double purple and large blue periwinkle, peach-leaved and nettle-leaved bell-flower, fraxinella white and red, hedyfarum clypeatum, lychnidea Virginiana, double German catchfly, Greek valerian white and blue, double white and red batchclore button, double white mountain ranunculus, double ragged robin, helianthemums feveral kinds, jacea's feveral forts, double feverfew, fea raywort, 'veronica's of feveral forts, digitalis or fox-glove, two or three forts, buphthalmums two or three forts, with feveral others of less note,

Hardy Trees and Shrubs now in Flower. White, blue, purple and Persian lilacs, elder role, yellow jeffamine, fyringa, early white, Italian and common honey-fuckles, cinquefoil-tree, labornums, two or three forts; bird-cherry, Cornish-cherry, flowering ash, horsechefnut, scarlet horse-chesnut, perfurned cherry, cockspur hawthorn, double flowering hawthorn, male cifplenty; early peas and beans, cauli- cytifus fecundus, clufii, lotus or nestletree, fea buck-thorn, spirea falicis solio, spirea opuli solio, spirea hyperici solio, menthly, cinnamon, damask and burnet-leaved roses, with some others.

Plants now in Flower in the Green-house and Stove,

Several forts of ficoides's, fome geraniums, aloes, oranges, aloe-leaved asphodel, onion-leaved asphodel, Asrican serious anemonospermos's, falvia Africana flore aureo magno, phlomis's several sorts, polygala Africana, the humble plant, ricinoides folio multifido, lotus argentea Cretica, with some others.

MAYBUSH. Hawthorn.

May LILLY. See LILLY of the Valley.
May WEED. See STINKING CAMOMILY.

MEADOW. The Farmer in his conversation, and writers in their books, divide the natural grafs grounds into two kinds, not as differing in the species, but in the place of growth, the intended use. These they distinguish by the names of meadow and pafture, and generally understand, by that diffinction, the grafs intended to be cut for hay, and that to be eaten on the ground, but this is an uncertain manner of speaking. By meadow some express the grass of low grounds only, that lie about rivers; and by pasture only fuch as grows on higher lands; but both these are by the judicious farmer mowed at times, and fed at times, fo that all that is properly to be understood by the two words is, that being used together, they express that part of the farmer's land which is not in tillage, and they should be used together, because this variation comprehends all grass ground whatsoever, in distinction from all that which is kept

It is a matter of great importance to the farmer, to proportion these two kinds of ground, the tillage and pasturage, one to another. There are many who call themselves farmers near London, and about other great towns, who deal altogether in pasturage; and this they may do without any necessity of tillage; but there is is no such thing as a man's keeping his farm all in tillage, without pasture. His cattle must have food, and his fields for corn in the common way of husbandry, require a great deal of dung for manure.

This brings on the necessity of keeping up a proportion between one kind and the other, for which there is no laying down any general rule; because, according to the nature of his land, and the particular course of husbandry he follows, more or less dung may be wanting.

His experience alone must shew him this, but he will find it easy to make alterations where it is necessary: the laying down a piece of corn land for grass, and the taking up a piece of grass ground for tilth, being, as we have

shewn, very easy.

There are particular estates also that answer best in various manners. There are some that are so rich and proper for corn, and that lie so conveniently for dung, that a much greater proportion than the common method may be kept conveniently and profitably in fillage; and there are others naturally favourable to grass, and that he where there is a great demand for it; and in these the greater part should be kept for pasture.

As we have shewn that the distinction into meadow and pasture is very little settled in its meaning, we shall, to be the better understood by all, speak in general of both under the name of grass ground. The hay from grass grounds that lie low, and are what is most properly called meadows, is generally in larger quantity than that from such as are higher; but this latter, though there is less of it, is sweeter.

The abundance of water that often gets into, or upon these low grounds, makes the grass rank; and where they lie in the way of constant wer, they naturally produce very coarse kinds of it. We see rushes grow in barren and wet places, and there are a great many kinds of grass, the not enough regarded, that more or less approach to the rushy kind, which greatly diminish the the value of the hay, that comes from the wetter fort of these grounds.

The grass grounds that lie high require affiftances from manure, but those which are lower, and in the way of flooding, do not; the overflowing of every river so far imitates that of the Nile, that it always leaves a mud behind it, which serves in the place of manure, and makes the grass spring fresh, as if art had been used to recruit the strength of the ground.

F 2

We have named two kinds of grafs grounds, but there is a third yet to be mentioned, which is fuch as are in the reach of falt water, whether by the fides of rivers, near the sea, or of the fea itself. These are a great quantity in one part or other of the kingdom, and are capable of being turned to very good account, their management therefore is a material confideration in

a work intended for general use.

Having premised thus much concerning the nature and diffinctions of grass ground in England, we shall first confider the three forts separately, and afterwards the general and particular methods of procuring the richest pro-

duce from each.

These are what the farmer generally expresses by the term up-land grass grounds; fome, by way of distinction from the lower, call them pastures, the other having the name of meadow, These up-land grass grounds differ in fituation as they lie upon higher or lower risings, or upon their tops or sides: they also vary greatly in their soil, which, tho' it be in general different from that of meadows, yet is also very various in kind between one up-land ground and another.

With respect to their particular fitu-ation, we must first observe, that as a certain degree of exposure is proper for grass, so there may be too much; and therefore that those risings which are of a moderate height, are better for grafs than fuch as come under the de-

nomiation of high hills.

The next difference is, that of their lying on the top, or on the fide of a hill; and this is fo great, that it often trebles the value in one above the other: nothing is more frequent than for ground to be wet and boggy on the top of a hill, while it is perfectly fine on the fides all the way down.

Springs naturally rife on hills, and when they are pent in, they break and foak through the very substance of the ground, and convert the whole upper

part of the furface into a bog.

On the contrary, the fide of a rifing ground that has a gradual defeent, is, of all fituations that can be named, the best for grass. In such ground there generally is moisture at the bottom, which is very effential to grass, and there is a way for it to run off, which is equally necessary.

Grass will not thrive without water, nor can it be good where there is too much; this is the great article. Where the tops of hills that are any thing high have no fpring, the bleakness of the exposure, and the poorness of the soit, as that is commonly the case, render the grass very weak: it is sweet, but very little of it; and where there are springs, it is general boggy. The way of getting off the water we have already treated of under the article draining; we here speak of the natural condition.

Now the fide of a hill, having foil and moisture, feeds a rich and good grass, without having so much wet as to make it rank, or favour the growth of rushes, or those other bad kinds of mixture, which generally depreciate that which grows on the tops of hills,

or near rivers.

As to that in meadows, lying low, it is generally a black rich mould, and nothing more favours the growth of fine grafs; but then what thefe grounds gain in foil, they lofe by the abundant moisture.

The up-land pastures, of which we treat here, have all that variety of foils we see in tilled ground; they are sometimes gravelly, fometimes loamy, in others they are flony, chalky, or clayey. Of all thefe, the loamy foil, where there is a good proportion of rich earth amongst it, yields the best grass; upon clay, it is apt to be coarse, because of the wet it detains; upon chalk, it is low; upon gravel, it is sweet, but thin; the loam, when of the right condition, yields it just in the middle way between all these, it is plentiful yet sweet, and affords the finest hay, and the sweetest and richest food for cattle.

This will direct the farmer, when he is about to make changes in the proportion of his tillage and pasture, what to keep for grafs, and what to break up,

A foil that is too clayey, is liable to great inconveniencies with respect to grafs: in winter it detains the wet a long time, and in the summer it cracks and chaps, and no earth is more per-

feelly burnt up.

The black mould, fuch as is in the low grounds, yields abundance of fine grafs when it lies dry on the fide of a hill, but then it is commonly infested in a terrible manner with worms; the loamy foils are less subject to them, and

are therefore preferable; so that on all accounts, that preference is due to the rich loams, which we have given them in respect to the growth of grass: they are not subject to poach in winter, nor to crack or be burnt up in fummer.

All low ground is subject to overflow ing, either in a larger way by rivers, or in a fmaller by the water coming from the higher grounds in the winter rains; and both these wettings are of great benefit, if proper care be taken to carry off the redundant water; and to prevent the overflowing by rivers at

improper times.

The finest part of the mould is washed off by rains from ploughed lands that lie high, and a part of the manure with it, and carried down with the water to the low grafs grounds at their bottom; this it is that renders them fo fruitful; and in fame manner land floods drowning meadows by river fides, have the fame effect. The waters of these are thick and yellow, with the richest part of the foil from the adjoining high grounds, and they leave this upon those meadows when they lie upon them to fettle, and are then taken off. This ren. ders the grass on these grounds very plentiful, but as there generally remains too much of the moisture behind, it is coarse; there grow weeds, and ill kinds of grass in them, which are not in the fweet pasturage of the up-lands, There is a great deal of difference in the value of those meadows which are liable to be overflowed by accident, and those which are capable of being overflowed at pleasure, but are out of that danger. In the first, the water may come at a wrong time, and often does fo to the utter loss of the crop: but, in the other, it never can come but when it is brought, and yet 'tis at all those times, when proper, ready at the husbandman's command.

Such meadows as lie flat on the banks of great rivers, are of the first kind: thefe are subject to accidental floodings, which may come at very wrong times and are therefore very precarious and uncertain as to the produce.

Those which lie near lesser streams, and a little higher than the level of their waters, are of the latter kind; they may be overflowed when it will do them good by turning the ftream of the water upon them; and these are worth much more than other low grafs grounds

for this reason; as the others, from their hazardous situation, are worth

To those two we may add a third kind of grafs grounds, which are of a kind of middle nature between thefe, and the up-land pastures. are fuch as fie above the level of the water confiderably, yet not so much but it may be brought over them by means of wheels or engines : thefe are expensive, but the benefit very great. We have not the spirit of the Italians in this respect, nor indeed the necessity : they raise water to a surprising height for the overflowing their pastures; and they owe all their verdure to that artificial management.

The meadows that lie on the fides of large rivers, having all the same general foil, which is a rich dark mould they yield abundance of grass; and they owe their fertility to the overflow-

ing of those rivers. When grafs grounds lie near the borders of great rivers, but so high as not to be flooded accidentally, it will always be worth the farmer's while to have an engine for overflowing them at fuch times as he shall think proper.

We have shewn what is to be expected from each kind of grafs ground with respect to its soil, its situation and its degree of moisture: we now come to confider those accidents to which all grass grounds are liable, and which reduce their value. These are of three principal kinds, the first being from weeds, the second from rubbish of any fort, left on the ground, and the third from ant-hills and mole-hills : these last are the most difficult to be removed, but when mowing is confidered, they are of all other annuyances the most obnoxious,

Weeds are of various kinds, and hurtful in different degrees. All plants, not of the grass kind, may be called by this name when among grass, but fome are beneficial: the white trefoil, which is a fort of clover; and the red trefoil, which is a wild clover, are both serviceable, and so are several other little plants that rife fpontaneously.

among the grafs.

The large weeds are most troublefome, fuch as thiftles, docks, and mallows. Thefe are grubbed up, or drawn lows. There are grande for that pur-with an inftrument made for that purpose, called the thiftle hook,

pierce

pierces into the ground, and laying hold of them at fome depth, eafily pulls

the whole root up.

As to accidental rubbish, this must always be picked off. Some will be thrown on by carelesses, and some comes on among the manure; which, though not so easily seen at first, is very plainly to be perceived when the rains have washed the rich part of the dung into the ground.

Women or boys may be fent in to gather up this fort of stuff, which consists of bones, bits of brick, and broken glass; a little trouble takes it off, and faves a great deal of difficulty to the mowers. See ANTHILLS.

Dung is an universal manure for grafs ground, and the more mellow and rotten it is, the better: most people content themselves with it, and feek no farther; but grafs ground of of different soils as well as corn land, admits with advantage the same diver-

fity of manures.

For grass ground of the common kind, where the soil is a fat loam, or a loam with a very large quantity of mellow earth among it, the best of all manure is old dung and pond mud mixed together. This may be considered as the general manure for these grounds; and the time of laying it on is according to the particular circumstances or use the farmer makes of his land, from September to February.

The most favourable time of all is in the middle of winter, that there may be frost to dissolve and break to pieces the harder parts of the manure, and the rains may wash the whole into the ground at their leisure, while there is no great power of sun to evaporate the virtue of it as it lies spread on the

ground.

The way of laying on manure upon grafs ground, is to drop it in small heaps at due distance; and first employing labourers to break and spread it well by hand, the owner is afterwards to have it worked over with a

bush harrow.

When a piece of grass ground produces moss, and other bad things, but not in such a degree as to require the method of cutting up and burning, the best method is to strew over it twice a year, namely, in October & the beginning of February, a mixture of two parts coal-ashes and one part wood-

aftes, wetted with the emptying the

pots of the family.

On a piece of grass ground, that is cold, but not very wet, let the hufbandman spread a good dressing of pigeon's dung; or of the dung of sowls mixed with earth and coal-aftes. This is to be done at the latter end of February, and being the richest of all manures, it must be spread with the greatest care and attention; it will thus come to the roots of the grass, just as they are about to make their shoot, and will cause twenty blades in many places

to grow for one.

There are good grass grounds on the fort of foil quite opposite to what we have been naming, that is, on fuch a loam as having a great proportion of fand, and little of the binding ingredients in it, is hot, loofe, and crumbly. In this case the manure must be varied as the foil varies; and of all that can be recommended, nothing comes near the virtue of any one of those clayey marles we have described under the head of manures; a dreffing like this laid on early in winter, becomes quite broken and mouldered by the fpring, and will all wash into the earth; the consequence is, that it gives the two qualities wanting firmness and fatness. The quantity of hay may very well be doubled by fuch a dreffing, and the feeding in proportion; and although this be an expensive manure for grafs lands in the first laying on, yet it very well answers in the end; for the effect, instead of three or four, which is the common duration of manures, will last ten or twelve years.

In some of the up-land pastures in Derbyshire and Staffordshire, there is a kind of brown earth full of fragments of stone. The proper manure for this

is lime.

There is nothing fo wrong in the hufbandman's whole practice, as the deferring the laying his ground for hay too long: it may be convenient to him to feed upon it; but let him confider what will be the effect of a hot dry fummer, and what will be the loss if he be disappointed of his crop. Spring is the feason for the grass to make its shoot; and if it be eaten over and over again at that time, and hot dry weather follow, it is deprived of the benefit of rains, and never makes that first shoot tolerably, nor comes to any reafonable growth afterwards. For these There is a time of the year greatons let the farmer suit his severa I every plant slowers; and grass, like occasions, so as to be sure of laying others, has its season. If we examine in other plants the course of namine in other plants the namine in other plants the course of namine in other plants the course of namine in other plants the namine in other plants the name i tage of feeding, he may be perfectly affured of making himfelf ten-fold returns for it.

As foon as the cattle are off let him fend in women or children to finish the clearing of the ground, by picking up the broken boughs of trees that the winter winds may have thrown in upon the graß, and every other kind of an-noyance: this done, let him fend in a labourer or more, according to the compass of ground, and let these have orders to break and spread all about the dung that may have fallen from the eattle upon it; and also to break and fcatter any fresh mole-bills,

This being done, the expence of which is very little, and the convenience and benefit very great, let him order the ground to be rolled carefully

and thoroughly.

The rolling grafs grounds intended for mowing is of great confequence, as it prepares the furface for the fcythe, and deftroys the last accidents that can happen to it during the preparation for

In the winter months the furface of the ground will be rendered here and there unequal, by the treading of cattle, in fuch places as the wet has most affected, and where it has lodged most: these make the growth of the grass irregular, and therefore are an injury.

During the first approach of spring the worms will be at work, and will every damp and mild night throw up abundance of their casts; these also are, like the other, nuisances, though not great ones, and they hinder the right and regular growth of the grass; if there be moles, or if there be any ants left, they will also be at work at the same time; and this is a season at which all thould be fet right; and the condition of the ground is such that it will easily be so. The roller will anwill eafily be fo. The roller will an-fwer the purpose, for it will take more effect at this time than at any other.

The ground being thus carefully laid for hay, the farmer has no farther care but knowing when to cut it. This he must carefully observe, for there is a proper time of ripeness; and all after, as well as all before that, is fo

much lofs.

leaves stand pretty well during the flowering, they wither when they come to ripen the feed. The leaves of grass go to the quantity of hay as well as the stalks; and are indeed the best part: they are not therefore to be neglected for the fake of the other. The hay will not have its due quantity till the stalks are full grown; but after that time, the leaves will fall so fast into a state of decay, that there will be more lost by twenty times at the bottom, than there is gained at the top. The price of hay is very considerable, but that depends upon its goodness; and this upon two articles, the time of cutting, and the manner of making ; and upon the former little less than on the latter.

The fine green colour of hay is very much valued. This is owing, in a great measure, to the making; but then it must be in the grass itself, otherwise all the care that can be taken in drying it, is all in vain; a proper method of turning will preferve a colour, but it cannot give it: that must be from pature.

This fine colour depends, like the rest of the good qualities, on the time of mowing, or the degree of ripeness of the grass. When it is just in flower, the leaves are fresh and green; bus when it is got to feed, they grow brown : this is the first step toward their decay, and this is the change of colour which

no art can recover.

While the grafs is but coming to perfection, it is too green; when it has stood too long, it becomes brown; and that fine pale green colour fo efteemed in hay, can never be obtained

by any art afterwards.

The fmell of hay is another article of its value, and this, like the reft, must be preserved by care in the making, but it must be entirely owing to

the time of cutting.

Hay that has flood too long, has the the appearance of fo much stubble, and has no more fmell; whereas at the time of the grass flowering, which is its just state of perfection, there is one of the pleasantest flavours we know, from the cutting through of the stalk,

and the evaporating of its juice in drying. The colour of the stalk fades as well as that of the leaves, after the due season is over.

Let the farmer go into his grass fields from time to time toward the beginning of June, if not prevented sooner by the full ripenels. Let him examine the staks which will be now grown up in height, and see how their tops approach toward ripenes; he will perceive from time to time the little heads swell, and at length there will appear a few white threads. These, in some kinds of grass, only shew themselves on the surface of the buttons; and, in others, hang from them a fifth part of an inch. This is the flower of the grass, and when it appears, the haytime is near.

He must not judge from one or two plants in a hundred, but see when the whole field thus gets into bloom; and then he must be critical in his examination. The fuller and fresher it is at the top, while the bottom remains perfectly sound and good, the better; therefore that is to be examined for the final marking of the time. Let the farmer open the grass with his hands in several places down to the ground, and observe carefully how the lower part looks: as these flowery parts, or the top, ripen, the bottom will grow brown. After this the top will get nothing, and the bottom will lose a great deal, so this is the time for the mowing.

The mowers are to be fent in, and the ground having been thus prepared and levelled for them, they have no excuse if they do not cut it close. These are a fort of people, as every one knows who has had any concern with them, who are very apt to flight over their work, and ready to feize upon any pretence for doing fo: they have no confideration that their careleffness is the loss to the farmer, perhaps of the tenth part of his crop; but let him As he has accortake care of himfelf. ding to these directions prepared the ground for them, let him follow them and frequently put them in mind of it, they will thus be brought to do much better than they ever will when left to themselves; and the addition to the quantity of the hay will very well pay the farmer for his care and attendance.

The business of hay-making is generally done much better than that of

mowing; and if any omiffion be made in it, it is easily seen, & there is time to rectify it; but in the mowing, the mischief is scarce to be seen, unless the scythe be followed; and when it is once done, there is no mending of it. The grass being down, it is to be carefully dried; and in this there is so much difference between the practice of the farmers in those parts of the kingdom where husbandry is most improved, and the others, that it should be set in the strongest light, to render those improvements universal.

The grass being down, it is to be turned and dried, and then it is hay. This is the whole process in a few words, but there must go more to the

well understanding of it.

The great care in this point, is to preserve the colour. The grass being cut in the condition we have named, will be of a fine green, and this is to be preserved; for the farmer may be affured, that a loss of colour is always attended with a loss of taste, and loss of smell; and with a certain loss in the article-of price.

To preserve the colour of the grafs, and give it the full sweetness when it is mowed, it should be let to lie in the fwarth two days and a half. At the end of this time it is to be spread out; this is properly what is called tedding the hay; and thus it is to lie exposed to the fun during the remainder of the Then it is to be made up in little cocks, which are called grafs cocks, at evening, and fo left for the night, The next morning, as foon as the dew is off the ground, these grass cocks are to be spread, and thus the fide of the grass that had lain undermost, will get dried. In this condition it lies all that day. Toward evening, it is to be cocked up into the same little grass cocks as before.

This is a reasonable, and an excellent practice, for it at the same time gives the hay all the advantage of the air and sun during the day, and defends it from the dews of the night, which can do little harm when it is gathered up in these heaps; though while it lay spread upon the ground, they would have greatly interfered with the drying. Sometimes when this caution of cocking up at evening has been omitted, the whole quantity which was very orward in drying the day before, has

been rendered damp and soft, and brought into a worse condition than at sirst; for the water of the dew is more hurtful to its colour than the natural juices of the grass. In this condition the smell and colour have been greatly impaired, and there has been afterwards ne way of recovering them. This is not so bad as the practice of the remote farmers, whose hay is always brown, and mow-burnt; but it is very much inferior to the true and careful method, and never fails to reduce the price.

In the proper method of hay-making after the tedding, and grafs cocking, fo far as we have named, the hay is to be fpread again, and drawn up into a kind of lengths, which they call windrows. This is a very good condition for drying, and what is a great advan-tage also, these wind-rows are easily thrown up into cocks, for they lie conveniently for that purpole: thus when the weather is fine, the hay has the full advantage of it, as it lies spread out in these rows; and if rain come on, the hay-makers can tols it into cocks in a few minutes, in which condition it will get very little damage, and is ready to be spread again to take the advantage of the next fair blaftyre A

From these wind-rows the hay is to be thrown into large cocks, and in thefe to fland through the night, and for some time afterwards; but then it is not, though pretty well made, to be carried home directly from the field in this condition. The outfide of one of these large cocks will be very dry, while there is moisture in the middle, and the farmer's business is to have his hay all alike; not only fome of the juices of the grafs will remain in that which has been in the innermost part of the cock, but it will sweat a little with lying together: therefore thefe cocks must be thrown to pieces, and the whole quantity of the hay once more spread upon the ground. If good weather follow, it will thus dry in a very compleat and perfect manner: three hours wind and fun going farther under these circumstances than a day at another time.

If the weather continue favourable, the business of hay-making is thus happily finished; but if rain come, the farmer is not to turn the hay that has catched the wet as it lay spread,

but to let it dry as it lies, which, there showers being seldom sasting, it will quickly do. On the contrary, if the over-care of the hay-makers should turn the grass thus nearly dried, and then wetted by accident, to the ground, the damp of the earth would greatly injure it. On the other hand, as the wet is slight, and the sun and air have great power; the top will presently dry again lying as it is.

After this foreading from the cocks, the hay may be thrown together for convenience of loading, and is in perfect good condition to carry in a load

MEADOW Rue, [Thalictrum.] There are feveral species of this plant, all hardy perennials, easily propagated by parting the roots in autumn, and sowing the feed in the foring.

ing the feed in the spring.

Mrabow Saffren, [Colenium:] There are three species, the common autumnal, the mountain Spanish, and the variegated eastern Meadow Saffren. The first grows wild with a purple flower in many rich meadows. They are all hardy, and are propagated by off-sets of the bulbs, taking them up in June when their flowers decay, and putting them into the ground again in August.

Mrabow Sweet, [Ulmaria.] This herb is frequent in moult meadows, and about the sides of rivers: it flowers in

about the fides of rivers: it flowers in the beginning of June, and continues in beauty a confiderable time. The flowers have a very pleafant flavour, which water extracts from them by infusion, and elevates in diffillation.

MEADOW Trefoil. See CLOVER.

MEASLES. This is a common diforder among hogs, and fhews liefelf in a redness of the eyes, and foulness of the fkin, and in their neglecting their food.

The best remedy is this. Keep the hog fasting the whole afternoon and night. Then set before him a good mess of victuals; not large in quantity, but hot and well prepared, and put into it forty grains of salt of hartshorn and two ounces of bole armoniac. It will all go down very well after this sast; and will make a good beginning of a cure. The same method is to be followed every day till he is persectly recovered, and for a sew days after, for sear of returns.

MECHOACAN, Mechacanna.]
The root of an American convolvulus not very unlike jalap, but inferior
to it in virtue, and the quantity of refin it yields.

MEDIC. Lucern.

MEDEOLA, See African ASPARA-

MEDLAR, [Mepiles.] A species of fruit-trees, which may be raised by grafting or budding them upon the common white-thorn. This is the usual way of propagating the American forts, which are of the hawthorn kind; but the best way to raise the other forts is from their seeds. All medlars will take when they are grafted or budded upon each other. They will also take upon stocks of pears, or of quinces, and both of these will take upon the medlar; so that there is a great affinity between them. All the American forts will grow twenty seet high, if they are not stinted by grafting.

mot flinted by grafting.

Mediars may also be raised from their feeds, which, if put into the ground in autumn, soon after they are ripe, will come up the following spring: but if they are not feet till the next year.

they will not shout till the year after.)
MELANCHOLY THISTLE, [Cirrium:]. This plant is preserved in the
gardent for variety, and is propagated
by sowing the feeds in the spring.

MELHLOT, [Militars.] This grows

MELHOT, [Melitus.] This grows wild in hedges among corn; and has likewife, for medicinal uses, being cultivated in gardens. The green herb has no remarkable small; when dry, apretty strong one; the taste is roughish, bister, and if long chewed, nauseous. A decoction of this herb has been recommended in inflammations of the abdomen; and a decoction of the slowers in the fluor albus. But modern practice rurely employs it any otherwise than in emollient and carminative clysters, and in formentations, cataplasms, and cholike; and in these not often. It formerly gave name to one of the officinal plasters, which received from the melitot a green colour, but no particular virtue.

MELON, [Cucumit.] Of the melon, there is but one real species of the plant, but of the fruit there are innumerable varieties, with respect to figure, fize, colour of the rind, and fieth or

This fruit, in different varieties, is

of various fizes, from about four to tent or twolve inches in length and diameter, in most forts ripening externally to a yellowish colour, and some ripen green, and others white, but have mostly a reddish fiesh or pulp, except one variety, which is green both in rind and pulp, as hereafter described.

The varieties of most estimation at

present in the English gardens are,

Common Must-Melon. A large, oblong-oval, longitudinally-ribbed, and
netted-wrought Melon, having a reddish tolerably rich flavoured flesh; and
the plants being of the hardier kind,
generally set a plentiful crop of fruit.

This is also one of the best forts of
melon for mangoes, for which purpose
the London gardeners cultivate principally this variety for the supply of
markets.

Romana-Melon. A roundish, moderate-fized, ribbed, and netted melon, fomewhat compressed at both ends, and with a reddish firm siesh of a fine rich stavour, the plants good bearers, each often setting from about sive or fix to eight or ten fruit, and is one of the best forts, both for an early and

general crop.

Cantaleupe, or Armenian Warted Melen.
A large, roundish, deeply-ribbed melon, a little compressed at both ends, and the furface full of warted protuberances, and with a reddish firm flesh of a most delicious rich flavour, of which there are fome varieties, Large black carbuncled or black rock cantaleupe melon, being of a blackish green colour, having the furface covered with high, rugged, faxtile protuberances. Large white carbuncled cantaleupe melon. Orange cantaleupe melen, Thefe varieties are the finest of the melon kind, with respect to the richness of flavour of the fruit, and which by the melon-eafers are preferred to all the other forts : but the plants being rather more tender, do not fet fruit fo freely, nor in fuch plenty, they often not having more than from one to two or three fruit on a plant, and in a three-light frame fometimes not more than five or fix fruit,

This variety derives the term Cantaleupe meton, from Cantaleupe near Rome, the place where it was first cultivated in Europe, brought thence

from Armenia.

Small Portugal Melon. A fmallifh

round melon, having a reddish flesh of a fine mulky flavour, and the plants are plentiful bearers, each often fetting from eight or ten to twenty fruit, which, however, is more by half than frould be left to come to perfection.

Green fleshed Melon. An oval, mode-rate-fixed melon, having an even, Imooth, green rind, and the flesh or pulp ripefling to a greenish colour, which is highly flavoured.

which is highly flavoured.

Lorge Green ringed Melon. A large roundlin-oval, green, importh-rinded melon, having a reddish floss.

Black Gelloway Milon. A roundlin oval, middle-fized, flightly-ribbed, dark-green, smooth melon, having a reddish, rich-flavoured fless, and the plants excellent bearers, but the fort not at present very plentifulin England. It was brought from Portugal many years since by a Lord Galloway. years fince by a Lord Galloway

Nettled or Wrought Melon, An oval, middle-fized, fearcely ribbed melon, having the furface closely wrought with raifed net-work, and bath a reddifth

White Spanish Melon, An oval, smallving a reddish pulp.

Zatra Melon: A very small, roundish,

warty-rinded Melon.

Observe, that although all the above kinds be only varieties of the fame fpecies, yet, by care in cultivating them feparate, they may be continued all to-

lerably permanent.

There are many other intermediate varieties of less note, but a few of known good qualities is better than many different forts, some of which probably not much better than gourds; and of the varieties here specified, the Romana and Cantaleupe kinds are confiderably the most worthy of attention, as these two forts ripen to a much

higher degree of perfection.

It is an exotic from the hot parts of the world, supposed principally of Persia, from which country, however, it was first introduced into the different parts of Europe; and confequently iss culture in every part of Britain can be effected only by artificial heat, and conflant fielter of glass, &c. till July, as at an early featon they require a temperature of heat almost equal to that

of our pine-apple floves.

The principal feafon of tipe melons in England, is June, July, and August;

they, however, by different fowings and plantings, may be obtained from May till October; but they are always in the greatest perfection in the times

before mentioned.

The flowers of the melon are confequently monacious, like the cucumber, as being of the fame genus and clafs, male and female spare on the fame plant, the males flanding immediately on the fummit of its foot-stalk, with out any appearance of germen or fruit under it, and the females discover the round germen or embrio fruit under its bale, when not bigger than a pea; observing, that the male biospoins are by nature defigned for fertilizing the female flower, as observed of the cocumber, so must not be pulled off until a full crop of fruit is set. nature defigned for fertill-

With regard to the propagation of the melon, the plants being annual, are raifed every year from feed, fowed at different times in fpring, in hot-beds of dung or tanner's bark, under frames and glaffes, &c. they requiring continual aid of artificial heat and thelter, from the time of fowing until June or July, for they will at no time fucceed in the natural ground, at least rarely perfect fruit; and each crops require two different hor beds, that is, to be fowed in one, and the plants nurfed therein till a month or fix weeks old, that they begins to shoot runners, then transplanted into a second and final

hot-bed, to remain to fruit.

The feafon for fowing is any time from the beginning of January, until the middle of April, according to the conveniencies there may be for their culture, and time the fruit is required in perfection; for the early crops, to be raifed in January, February, and be-ginning of March, require very sub-frantial hot-beds, under constant shelter of garden frames and lights, until July; but the later crops, fown in the middle of March, and in April, fuc-ceed with more moderate hot-beds, and may be ridged out in April and May under hand or bell-glaffes, or oiled paper frames, and the plants will fet and ripon their fruit under these shal-ters; observing, that the early sowings in January sometimes produce ripo fruit in May, but come into full bear. ing in June; and those raised in Fe-bruary, and early in March, ripen fruit in June, July, and August; and sow-ings ings performed any time from about the middle of March till that of April, furnish ripe fruit principally in August and September, and fometimes in October.

Observe, therefore, that, like the cucumbers, crops of melons may be raifed in three different ways; under frames and lights, under hand or bell-glaffes, and under oiled paper; each of which will be exhibited under a feparate head.

The materials principally necessary

in their culture are,

Frames and glass lights for early, and hand-glaffes, &c. and oiled paper lights, for late crops, and for each crop good mats for covering on nights;

Horse Gable dung, a plentiful sup-ply both for making the hot-beds, and for occasional linings, must be in quality, quantity, and preparation, as histed for cucumbers, and in the ar-

ticle hor-beds.

But sometimes in the melon culture bark hot-beds are employed, or of bark and dung together, which, where tanner's-bark can be easily procured, on account of its regular and durable heat, is a very proper material for hot-beds in the culture, of melons, either used alone, or mixed with hot dung.

As to mould, the melon, like the cucumber, will profper in any rich pliable kitchen-garden earth, prepared fome months in a heap; but the fa-vourite and most prosperous soil for the melon is a fine mellow loam, raken from the furface of a pasture field or common, enriching it with about one-third of rotten neat's dung, or thorough rotten dung of old hot-beds, preparing the whole in a heap, and managed as directed under the article Composts; observing, that when it is to be used, not to list or screen any, only break it well to pieces with the spade.

The fituation, or place for making the hot-beds, should be dry, warm, full to the fun, and sheltered, as for cucumbers; likewife observe, not to dig any trench for the early hot-beds, but make them entirely on the surface of the ground, for the reasons there

affigned.

It is generally advited to cultivate melons as far as possible distant from queumbers, left, by an intercommuni-

cation of their farina, it should cause a degeneracy; there is apparently some reason in this; however, when we confider that the two plants are real dif-ferent species, I believe there is no great danger to be apprehended, as in

the case of varieties.

The feed, and its kind, being material articles, you should be particularly careful to procure fuch only as have been faved from the very finest fruit of the respective approved varieties; this, if possible, should be two or three years old, for the reasons observed of the cucumber feed; but when you are obliged to use new feed, it is proper either to hang them in a paper, or phial, in a dry room near the fire, all winter, or in a phial, exposed in a dry window to the fun; or may carry them in your pockets three or four weeks, either of which expedients will dry up much of the watery parts, whereby the plants will be less luxuriant and more fruitful. We receive melon feeds annually from France, Spain, Italy, and other hot countries; but we would caution against depending on these for a principal crop, for not being enured to this climate, the plants from such would be more tender and delicate in their culture, less fruitful, and the fruit often of much less value, than those of seeds saved at home; therefore, only a plant or two of the foreign feeds thould be raifed at first, just to prove the quality of the fruit.

From the time of fowing the feed to the maturity of the fruit, it is commonly near four months, and fome-times longer; for the plants feldom shew fruit till they have shot several runners, which, from the first appearance of the plants, will be at least fix or eight weeks in effecting; from the appearance of the fruit till it is fairly fet, a week or fortnight; and from its fetting till fully ripe will be about forty

The proper quantity of hot-bed in the culture of melons for private use is, that for the imallest family there cannot be less than one three-light frame for the early, and three hand or bell glaffes, or three holes under oiled paper, for the late or succession crops, allowing two plants to each light of the frame, the same to each hand-glass, or hole under the paper lights; and fupposing each plant, one with another,

to produce about three fruit, fo that in a three-light frame, and in three holes under hand-glaffes, or oiled paper shel-ters, there will be but about from thirty to forty melons; though of the fmaller forts of melon there will fometimes be from fix to ten, or twelve, or more, on a plant; but fix or eight is as many as the plants are able to bring to perfection: however, for the supply of a middling family, two three-light frames, and, at least, fix hand or bell-glaffes, &c. will be necessary to furnish a tolerable supply during the feafon; and for a large family, four three-light frames, at least, or twelve lights, will be requifite, and double that number of hand-glaffes, or holes of plants under paper frames.

methods of culture; and first, of their early culture in frames, observe as

follows

The time of year to begin the culture of melons in frames, is January, February, and beginning of March; hut when defigned to have melons as early as possible, we commonly begin in January, though the beginning of February is a more successful time of fowing to have a good crop; if, however, you begin early in January, it is proper to fow also twice in February and March for fuccession crops; likewife to be ready in case of accidents to the early plants, or that they should not thrive, as is often the case at a very early season.

The feed may be fowed, and the plants raised, either in a hot-bed of early cucumbers now at work, in the fame manner in every respect as for them directed; or, where none is, make a hot-bed for a one-light frame on purpole, observing exactly the same rules with respect to dimensions, making, framing, and earthing the bed, fowing the feed, and other management, as directed for the early cucumbers; likewife, when the plants have been come up three days, that their cotyledons are a little expanded, tranfplant or prick them into fmall pots for the convenience of removal, as there directed; but of thefe, i e. melons, put only two plants in each pot, plunging them in the bed, and manage them as above till fit to ridge out; for the cucumbers and melons, .

fame degree of heat, air, &c. fules both in this part of their culture; it would therefore be superfluous to trouble the reader with a repetition, fince the particulars are fully exhibited under cucumbers.

In this nursery-bed they are to b continued a month or fix weeks, till

their first runners begin to advance; observing, as their stanks rise in height, to earth them up by degrees with fine mould, till the pots are full, for this will greatly encourage them, and the will come fast into the rough leaf, and begin to form joints and shoot runners.

Observe, when their two or three first rough leaves are fully expanded, and another forming in the centre, appearing like a bud, which part being also the end of an advancing shoot, it should just at this period of its growth be stopped, ie cut or pinched off close to the second or third leaf, as advised for the cucumbers, to procure lateral moots, called runners; for it is from thefe, or others iffuing from them, that we are to expect the fruit; and when these first runners appear, the plants are ready for ridging out into the fruiting hot-bed.

The plants from the time of fowing, till arrived at the above fize for ridging-out, take about five or fix week

growth.

The ridging-out, or fruiting hot-bed, should be prepared in due time to teceive the plants when arrived to the proper age and fize above-mentioned; observing, to prepare fresh hot dung a week or two in a heap, as for the cucumbers, fufficient for one or more three-light frames; let the bed be made entirely on the furface, for the opportunity of lining, carrying it up three feet and half, or four feet high, raifing the back or borth fide three or four inches higher; directly put on the frame and lights, to defend the bed from shilling rains, and to draw up the heat, tilting the glaffes behind for the steam to pass away; and in a week, or ten or fifteen days, according to the substance of the bed, its first great heat will abate; then prepare to mould it, and put in the plants, observing the necessary precautions, as for the cucumber beds.

The bed being ready, as above, then wheel in your prepared mould, and lay being nearly of equal temperature, the just under the middle of each light

shout a bushel of it in a heap, for the immediate reception of the plants, forming each heap into a fort of conical hillock about fifteen inches high; and the thus having the hills of earth this height, is proper both that the plants may be near the glasses, which is of importance to early work, and to allow them a good depth of earth; for they hould generally have a greater depth of mould than cucumbers, the plants being more impatient of moisture by vatering, which is also prejudicial to the prosperity and flavour of the fruit; that, therefore, by allowing a good depth of earth, they will first much longer without the aid of water : when the hillocks are thus formed, directly earth the other parts of the bed within the frame three inches thick, just to keep down the fleam rising immedistely from the dung; then that down the lights, and when the earth is warm put in the plants,"

in a day or two the heat of the doing will have sufficiently warmed the bills of earth; then bring the plants in their pots; being two in each, plant one pot of plants, with the balls of earth about their roots, in the middle of each hill, as directed for the cucumbers; and if the mould flould appear dry, give a hitle water towards the outfide, being careful not to wet the plants much at this time; and as foon as planted flut down the lights, to draw up the heat about the roots of the plants, but tilt them again in due time,

to pais off the fleam.

The plants being now ridged out into the fruiting hor-bed, observe, that as the glaffes are to be continued confantly on the frames till July, your daily care is to admit fresh air at all opportunities in calm weather, by tiltthe the lights bellind from about half an Inch to two, three, or four high, according to the temperature of the Theat and steam of the bed, and that of The outward air, which must be also observed occasionally on nights at first ridging out, if there is a great fleam, for this must not be pert up, nor stagwated for want of air i cover the glaffes alfo every night with mats, one for two thick, as thall feem necessary, but never let them hang down all over the fides of the frame and bed, as ofveen done, which would draw up a vident Ream, and exclude the air too

much from the plants, and draw them up weak and of a yellow colour; give water also occasionally when the earth appears dry sobferving, that in the performance of all of the above works in this bed, to follow strictly the same rules as exhibited in the ridging-out bed of early cucumbers; but to keep in mind, that melons, being rather impatient of moisture, must have it more feldom, and less in proportion, than for cucumbers, especially near the main flem and principal roots; for by much moisture these parts are apt to canker and rot, fo should be watered mostly at some distance from these principal parts, and never to wet the vine much at an early feafon; but when there is not less than twelve or fifteen inches depth of earth on the beds, they will not need water oftner than once a fortnight; and fometimes, when the earth is of a loamy nature and depth as above, and preffed down clefe, that it may the better retain its natural moilines, the plants, after two or three waterings, till they have firmly oftablished their roots, will often succeed without, or, at least, with very little more water; and in which cafe they generally fet their fruit freely, and it ripens to a rich and high flavour; for reduncancy of moisture retards the fetting of the fruit; and although, after it is fairly fet, occasional waterings will encrease its magnitude, yet much of it greatly debases its flavour and taste; but on the other hand observe, that where the earth of the beds is a light texture, or of but a moderate depth, the plants will all along require occasional waterings, especially in warm sunny weather; let it however be remembered, that when the plants exhibit their first thew of young fruit, no water, or as little as possible, should be given, until the fruit is fet as big as walnuts, when, agreeable to the ma-ture and proportion of the earth; and other rules as above mentioned, and as hereafter dinted, ble your differention

Examine with care for the first week after ridging out, that the earth of the fills and roots of the plants do not receive too much heat from the violence of the bed; and if there is danger, remove fome of the earth around the lower part of each hill; and if any is burned at bottom, add directly fome

fresh in its stead, and in a few days or a week the burning quality will fubfide; then place the removed mould again about the hillocks.

After danger of burning is paft, cherish the heat as much as possible, by laying long dry litter around the fines of the bed, to defend it from chilling wet

and cold piercing winds.

When the heat begins to decline confiderably, be fure to revive it as foon as possible, by adding a substantial lining of hot dung to the fides of the bed at different times, uting the fame precaution of earthing the top, &c. to prevent the steam of the linings enter-ing under the bottom, or at any part of the frame; for the rancid fleam coming directly from the dung would

destroy the plants.

When the fibres of the plants begin to advance through the hills of earth, let some fresh mould be layed in the frame at different times to warm, and by degrees add each parcel around the hills, till the whole bed is gradually molded nearly as high as the top of them; but rather let the top of each hill be about an inch higher, that the main stem and principal roots may be preserved moderately dry, otherwise, being watered, would foak to these principal parts, and cause them to rot, as being very impatient of copious moisture from watering, &c. therefore, according as the mould is occasionally added, observe the afore-mentioned precaution : also to press it down close, that by lying compact it may retain a due moifture in itself the longer, fo as the plants will require to be but feldom watered.

As the runners of the plants advance, dispose them with regularity, and when they are three joints long, if no young fruit appears, it is proper to perform a fecond stopping, by taking off the end of the extreme joint, to promote a more speedy supply of other lateral runners, which, together with others naturally arising from them, will sufficiently spread the bed with vine; and it is from these lateral shoots we may generally expect foon to fee plenty of young fruit.

At the first training the vines, as above, if fome dry and clean reeds are thinly spread upon the surface of the bed for the vines to run upon, it will fruit from the damp of the earth, as well as prevent the earth and upper fis-bres of the roots from being dried too fast by the fun; some, for the above purposes, cover the bed all over closely with plane tiles; but this I should think rather excludes the necessary benefit of the fun and air, too much from the earth and roots of the plants.

When the young fruit begins to appear, it is of much importance to fup port a due temperature of heat in the beds, by occasional linings, &c. do not omit this, because the whole success of having the plants fet, a regular and a plentiful crop of fruit depends on a good bottom heat, both to warm the earth fufficiently about the fibres, as well as the internal air of the frame; for these fruit being so extremely tender whilst young, that without a proper heat they fet very sparing and stragglingly, generally affuming a flow, flunted, and irregular habit of growth; maintain, therefore, the necessary de gree of heat, and the fruit will fet freely, and fwell fast in magnitude.

At this period also of the first a pearance of the fruit, I should advise to forbear watering, if possible, till the fruit is fet as large as good walnuts, as we above observed; observing, that if the plants are growing in a tolerable depth of foil of a loamy nature, they will shift very well without any during that period, or longer, unless the earth should be very dry indeed, and then let them have it but sparingly; for if any confiderable portion of water is given when the fruit is fetting, the vine will acquire a glut of fap, and conti-nue shooting with great luxuriancy, which is contrary to the nature of thefe. young fruit, as, being of fuch a delicate temperature in their infant state, and even during their minor growth, that the exuberant quantity of fap in the branches causes them to turn yellow, and drop off foon after they have bloffomed, and fometimes after they have fet as large as an egg, and more especially if there is not a due degree of warmth in the beds,

According as the young fruit appears, you will observe it accompanied by abundance of male bloffoms; thefe must not be picked off, as too often practised, their pulvis antherarum, or powder of their antheræ, being absolutely preferve all the runners and young necessary for fecundating the female

flowers, and fertilizing the young fruit; it is therefore of importance not only to retain these flowers, but also, to affift nature, it is proper, in the early crops, to perform the operation of fetting, i. e. of applying their antheræ to the stigmata of the female blossoms, using for this purpose such male flowers whose antheræ are duly ripened, and well furnished with farina, which you may readily know by previously applying the antheræ gently to the thumb nail, to which some of the pollen, if ripened, will adhere; fo using one or two males to each female blof fom, and it will be found to affift greatly in fetting the early fruit.

Air, at this time of blofforning, will also be particularly beneficial in promoting the free setting of the fruit; do not omit therefore to admit it every mild day, in manner before mentioned.

After fetting the fruit, observe, that as they are most commonly produced on the lateral runners, iffuing from exuberancy of fap retards their fetting, we would advise, if the plants are rather luxuriant, that, to restrain the sap from flowing too abundantly into the fetting fruit, instead of stopping the end of the runner, as often done, rather turn it carefully curve-ways, fo that the end may incline towards the main stem, whereby the fap will be directed from the bearing runners, and its course continued principally into the more luxuriant branches; and the fooner this is done the better, which, after the fruit is fet, and a little advanced in growth, must be turned again into their former position. Many perfons prune off the ends of the bearing runners a joint or two beyond the fruit, in order that the whole nourishment of that branch should be directed to it, to make it more certainly stand; but this has often the contrary effect, fince Ropping or shortening a branch promotes its drawing a greater quantity of fap, which, as we have above observed, is contrary to fetting these fruit; therefore, those branches on which the fetting fruit are immediately fituated, should not be stopped until the fruit is fairly fet, and full as big as a large walnut.

Neither is it proper to flop many of the runners, which would occasion their throwing out numerous shoots, and sause a great confusion of vine.

As the fruit fets, and has attained nearly the fize just mentioned, the branches on which they grow, if they were turned towards the main stem, as above advised, should be now reconducted into their former directions, that the sap may now find a freer passage to nourish the fruit.

Likewife, as the fruit fets, lay a piece of clean dry tile under each, to preferve it the better from the moisture

of the earth.

The quantity of fruit to be expected to fet and arrive to perfection, is from about two or three, to eight or ten upon each plant; but this is according to the forts; for the Canteleupe Melon fometimes does not fet above two or three on a plant; on the other hand, the Romana will sometimes set and ripen eight or ten, and fometimes many more fruit will fet than the plants are capable of nourishing; but, when this is the case, they should be thinned; and even of the smaller kinds leave only about fix or eight of the most promifing fruit upon each plant, and not more than five or fix of the larger kinds, and never leave more than one fruit upon the fame runner, and that which is nearest the main vine is generally the most eligible to leave, though it is best to fix upon that of the forwardest and handsomest growth.

After a tolerable crop of fruit is fet, and they advanced in magnitude, if the earth of the bed is dry, take the first opportunity of a mild day to give a good watering, especially if the bed is kept to a proper heat, which, according to the nature of the earth, and its deepth on the beds, may be afterwards either wholly discontinued, or less or more repeated, as you shall see occasion by the temperature of moistness, or dryness of the earth; observing, in giving water, let it be rather most towards the sides of the bed, so as still to preserve the main stem and principal root al-

ways moderately dry.

Continue alfo to admit air at all opportunities every day when the weather is fine, which is also very beneficial to the free growth of the young

fwelling fruit.

Still, likewife, continue to support a due temperature of heat in the bed by occasional linings with the usual care, even till May; for, by maintaining a bottom heat, the fruit will swell

freely,

freely, continue a regular growth, and be in a little time furprifingly forwarded in magnitude. In applying the last sining in April, or beginning or middle of May, it is proper to earth it at top equal in depth to that of the bed, and by raising the frame the fibres of the plants will firike into the mould, and receive very great benefit, as will appear from the healthful appearance of the plants, and free growth of the fruit; but observe, this part should be de-fended from great rains with mats, that the extreme fibres may not receive and convey too much moisture to the vines and fruit, otherwise it would be more adviseable to confine the fibres wholly within the frame.

Shadingthe plants occasionally from the fun may be necessary in very hot days, when the fun is so powerful as to endanger foorching their leaves, &c. observing the same rules as for the early

cucumbers.

As the leaves of the plants grow large, and prefs against the glasses, continue to raife the frame at bottom three inches; and as, in doing this, the earth next the frame will be diffurbed, directly therefore make good all inequa-Hties; and, if the leaves are confiderably crouded, it is proper to thin them a little in proportion, to as that the young fruit may receive the necessary benefit of the fun and air.

If, after a due quantity of fruit is fairly fet, and advancing in growth, the vine is greatly crowded, it is proper to regulate them, by cutting off close all the fmall runners, proceeding from the principal fruit-branches, and others, and any luxuriant shoots that support neither bearing runners nor fruit, and fuch other vine as may appear to be fuperfluous or unnecessary, cutting them off quite close, which will greatly encourage the free growth, and promote the fize of the melons.

In May and June, as the vines of the plants will be advanced to the fides of the frame, if you have a full crop of fruit fairly let, they may be pruned fo as to confine them within due compass; or, if you would have as many fruit as possible to succeed each other, they may be fuffered to run out from under the frame upon the top of the lining, to produce fome late fruit to fuc-ceed those already set within the frame, railing the frame high enough at bot-

tom for that purpole towards the middle of June; observing, when the vines are thus trained out, to cover them every night, and all very wet weather, with mats; for the glaffes must also still be continued on the frames till the weather is become quite fettled and warm towards the end of this, or in next month, (July) and then only taken off a few hours in the warmest time of the day, and always put on at night and in all wet weather.

When the fruit is nearly full grown no water, or at least very little, should be given; for moisture will confiderably retard its ripening, as well as rob it of the richness of its flavour. At this period of growth let each fruit be placed upon a brick, or fome flat tiles, placed one upon another, to raise it a little above the leaves, to receive the greater benefit of the fun and air, whereby its flavour and relish will be confiderably improved, being careful to turn it every three days, that every part may equally enjoy the benefit of the fun's influence; observing also, at this time, to admit a large portion of fresh air every mild day, by tilting the lights feveral inches behind, or in front, in very hot weather, which will also contribute very much to the rich flayour of the ripening fruit.

From the fetting of the fruit to its maturity, it takes commonly about fix or feven weeks, and fometimes more.

The maturity of the fruit is known fometimes by its cracking at the base, as if it would ftart or recede from the stalk; sometimes by its inclining to a yellow colour; frequently by imparting a fragrant odour; and when the top of the fruit is fost, it is always a fure indication of ripenels; therefore, observing these appearances of maturity, let the fruit be cut at the proper time; for if fuffered to remain on the vine a day or two longer, it will lose much of its flavour. Let it be cut in a morning before the fun thines hot to evaporate its rich juices, cutting each froit with all its stalk, and lay it in a dry but cool airy place till it is wanted for table.

In the latter end of June, and in, July, if the weather is dry and warm, the plants may be gradually inured to full air, by moving the glaffes off a few hours in fine dry days; but let them not have much rain, left it rot the

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main stem of the plants, and it would also debase the flavour of the fruit; therefore retain the glasses ready at the back of the frames, to draw on every night, and in all very wet and boisterous weather.

The culture of melons under hand or bell-glaffes is effected by fowing the feed in March or April, in a nursery hot-bed, under frames and lights, and when the plants are about a month old transplant them into ridges or hotbeds, under the above glaffes, to re-main for fruiting; but, in default of frames, the plants might even be raifed entirely under hand or bell-glaffes, placed on a hot-bed, fowing them in April, and transplant them into a fresh hotbed in May, under the fame forts of glaffes, or oiled paper lights; they will fometimes come in for a tolerable crop in August and September; however, the most eligible practice is, where possible, to sow and forward the plants in a hot-bed, under frames, pricking the young plants in pots, fo continuing them in the frame hot bed till large enough to ridge out, then transplant them with balls into the fruiting hot-

The most proper period of time for fowing the above crops is, the third and fourth week in March; but, if possible, for the main crops, never be later than the first week in April.

And the time for ridging out the plants under these glasses, is from about the eighteenth or twentieth of April until about the middle of May.

For, it must be remembered, that these hand-glass crops must never be raifed nor ridged out before the abovementioned times, otherwise they will advance too much in growth, and fill the glaffes before the nature of the feafon admitted of their being trained out, unless sheltered by paper frames, as they must not be confined within the fmall compass of these glasses, longer than the beginning or middle of June, when the weather becomes fettled and warm; nor ought the principal crops to be fowed nor ridged out later than the times above specified, because they would not be forward enough to ripen their fruit in perfection before the approach of cold weather in autumn,

The feed may be fown, and the plants raifed large enough for ridging ont, either in the hot-beds of forward melons or cucumbers now at work under frames, or in a fmall hot-bed made on purpose for a one-light box, &c. earthed a few inches deep, fowing the feed either in pots half an inch deep, or in the earth of the bed, drilling it in that depth, fo managing the fame as for the feedling melons and cucumbers for the frames; prick the plants also in pots, when a few days old, two in each pot, as in the frame crops, giving them nearly the fame culture; and having expanded their two first rough leaves, stop them at the first joint, as there directed; and when a month or five weeks old they will begin to shoot runners, and should then be ridged out into the fruiting hot-bed.

Therefore you must forecast to prepare the dung, and make the ridges or hot-beds in proper time, to be ready to receive the plants at the above peri-

od of growth,

The dimensions of the fruiting hotbed should be four feet and half wide, and, if made in April, two feet and half, or a yard high; and even if made early in May, two feet and half depth of dung will be requisite; nor should it be less than two feet high, made in any time of that month; and the length in proportion to the number of glaffes you intend working, allowing them at a yard and half distance from centre to centre, in one row along the top of the bed; observing, that if the plants are ready for ridging out in April, or beginning of May, the bed should be made entirely above ground, for the opportunity of lining the sides when the heat declines; or, at this feafon, if the ground be tolerably dry, fo as there will not be much danger of standing, the bed may be made in a trench, for the advantage of having it retain its heat the longer, making the trench four feet and half wide, and eighteen or twenty inches deep; but observing, that in three weeks after the bed is made, the trench must be widened a foot and half on each fide, and to the full depth, to admit of a lining of dung that width and depth to each fide of the bed; for hot-beds made for these plants at either of the above-mentioned times, either on level ground or in a trench, will receive confiderable be-nefit by having a lining of hot dung added to each fide in three or four weeks after making, which will not

only throw in a fresh heat, but, by being earthed at top, give an additional width for the roots and vines of the plants to extend; observe likewise, that if more than one range of hotbeds are intended, make them one before another in a parallel direction, allowing a space of four or five seet between, which, if afterwards entirely filled up as high as the ridge with hot dung and earth, will be of great ad-

vantage to the plants.

The ridge or ridges being made, then, according to the rules and precrop of cutumbers, prepare to earth it with the proper compost for the re-ception of the plants, first marking out with flicks the places for the glaffes, in a row along the top of the bed, at a yard and half diffance; and then, on each place where the glasses are to ftand, lay about a wheel-barrow full of mould in a hill fifteen inches high at least, and wide enough for a hand-glass, for this depth of earth is as neceffary here as in the frame crops, co-vering the other parts of the bed between the bills only three inches deep at present, that the burning steam and heat may have due vent, yet to prevent it from evaporating too fuddenly; it is afterwards to be gradually earthed almost as high as the top of each hil-lock: as soon as the bed is thus earthed fet on the glaffes, one upon each hill of earth, covering the whole with mats at night, to draw up the heat the fooner, and in a day or two the earth will be warm enough to receive the plants.

When the earth, therefore, under the glaffes is properly warmed by the dung, then, having previously watered the pots of plants the day before, that the earth may adhere in a ball about their roots, proceed to plant one pot of two plants under each glass, removing the plants out of the pots with a ball, in the manner directed in the early cu-cumber hot-beds; and, levelling the top of the hillocks broad enough for each glass to stand, make a wide hole in the middle, and plant the ball of plants, giving directly a moderate watering, and put on the glaffes, which must remain constantly over the plants, and be covered every night for a month or two, & in all bad weather, with mats.

They being now ridged out, observe, if their removal causes them to flag their leaves at the approach of the fun, it is necessary to include them with a moderate shade the first three or four days, when funny, or till they stand the fun fully without flagging.

Fresh air must also be occasionally admitted in the warmest time of every fine day, by tilting the warm fide of the glaffes an inch, or a little more or lefs, according to the heat of the bed & temperature of the weather, having particular attention to flut them down close in due time in the afternoon, or as foon as the weather changes cold. keeping them close on nights; also in all unfavourable weather in the day time, unless there is a very great steam, when, during its continuance, the glasses must not be kept too close; and, if the weather is then cold or windy, the place where they are tilted may be defended with a mat; observing, as the warm weather advances, and the plants make progress in growth, a larger portion of fresh air must be admitted, to harden the runners gradually, in order to be trained out from under the glaffes in June.

Cover the glaffes and the whole furface of the bed every night with large mats, which must constantly be pracclifed until the beginning or middle of June, or longer, if cold weather renders

it necessary.

Likewise, in all heavy or cold rains, at any time, night or day, from the time of ridging out to the maturity of the fruit, particular care should be taken to defend the whole ridge, by a good covering of mats, for much wet would ruin the crop.

Waterings in warm weather once a week or fortnight, in moderate quantities, may be necessary, according to the rules mentioned in the frame crops.

In a week or fortnight after ridging out, when the heat of the bed is become moderate, begin to earth the whole gradually almost as high as the top of the hills on which the plants stand, pressing it down from time to time, that it may retain its moisture the longer, so as the plants may not require much water, raising the whole nearly equal with the fummits of the hillocks, preferving the middle of each rather highest, to prevent moisture from foaking to the main stem, &c. as formerly cautioned,

Lining the ridges will be necessary

in about three weeks after they are made; this ought not to be omitted, especially to those made in April, or early in May; and having for this pur-pole a quantity of well prepared hot dung, add to each fide of the bed a foot and half width at least, and full as high as the dung of the bed, and directly earth it at top to the thickness of that on the ridge; and thus, by fides the advantage of renewing the heat, it widens the bed to about feven feet, and forms a fine scope for the fibres and vines of the plants; observing, if there are two or more ridges ranging parallel, that if the whole space between was afterwards gradually filled up with hot dung and mould, it would prove fill more beneficial to the plants.

Having directed stopping the plants at the first joint to procure lateral runners, if these laterals are also stopt at the third joint they will more speedily furnish a farther supply for bearing, as observed of those in the frames.

About the end of May, or beginning of June, the first ridged-out plants will have nearly filled the glaffes with their runners, at which time do not omit indulging them with a large portion of free air at all opportunities, by tilting the glaffes every mild day two or three inches high, or in proportion to the temperament of the weather, fo as to strengthen the runners, and harden them by degrees to the full air, which, in June, when fo much advanced in growth that they can be no longer contained within the glaffes, must be trained out; the glaffes must then be raised three inches on every side, on props, as for the cucumbers, and the runners trained out with regularity; but if some dry reeds are previously fpread upon the furface of the bed, for the vine to run upon, it will preserve them and the young fruit from the damp of the earth; observing, the glaffes are to remain constantly over each hole of plants, to protect the main stem and principal roots the better from wet and other inclement weather, but are now to remain day and night supported on props, as above: continue also the nightly covering of mats for the first tortnight, at least, after the plants are trained from under the glasses, to protect the tender vines till inured to the full air.

Observe, likewise, that as melons are rather impatient of copious mointure, it is adviseable, after being thus trained out, to protect them with great care from excessive rains and cold, at all times, day or night, by proper covering; the most effectual means for this purpose is, to place oiled paper frames over the ridges, as soon as the vines are trained out; however, in default of these conveniencies, we would advise to arch the bed over with hoops or rods, &c. just to the height of the hand-giasses; so having good thick mats or canvas cloths always ready to draw over the arches, in time of heavy or cold rains, and blustering winds, will be found of very considerable advantage, since a few hours violent rain often injure the plants so greatly, that they never after recover, so as to produce handsome fruit, nor bring any to-lerable crop to persection.

But when the beds are covered with paper frames, these remaining confrantly on the beds, effectually desend them at all times, and admit a due portion of light, &c. to the plants.

If, however, you use only mats or canvas, to cover occasionally in cold nights and bad weather, let these be always taken wholly off betimes every fine morning, or as soon in the day as the weather is savourable.

In June and July the plants will fpread their runners all over the bed, and will shew fruit abundantly, at which period of shewing fruit very little water should be given, especially if there is a proper depth of earth on the beds, but in very hot & dry weather, after the first tolerable shew of fruit is fairly fet, and begin to advance in magnitude, a moderate watering once a week, or ten or twelve days, whilft the fruit are taking their growth, will encourage them, promote their fize, and encrease the substance of their fiesh, being careful to apply the water mostly towards the fides of the bed to the extreme fibres, fo as to preserve the main stem and principal roots from receiving too much wet; and be fure never once to over-water the beds, which might prove of very bad confequence; but for the greater convenience of watering at this period, a deep drill may be drawn around the outsides of the bed, and the necessary supply of water poured into these drills, whereby the fibres

will receive its benefit without wetting the leaves, branches, or fruit; but when the fruit is nearly full grown,

give as little water as possible.
With respect to useless and superfluous or unnecessary branches or runners, if there be any, it is eligible culture to clear them off occasionally, to prevent confusion of vine, and for the prosperity of the fruit, executing it according to the rules laid down for those of the frame plants.

Observe also the same of superfluous fruit, leaving only fuch a due quantity of the most promising and best-situated in each hole, as the plants can be ex-pected to bring to perfection.

During the growth of the fruit, ob-ferve, that if the ridges are not covered with eiled paper, but only with the hand-glaffes, &c. and the weather should prove rather unfavourable or wettish, and that many of the fruit are fituated on the advanced vine withoutfide of the glaffes, it is adviseable either to move the fruit gently under their own respective glasses; or rather, where there are any spare glaffes, bring thefe and place over the fruit, contriving each glass to cover as many as may be convenient; for it is necessary thus to protect these fruit from injury of weather, supporting each glass two or three inches high on props; and this shelter of the glaffes will greatly improve the fize and flavour of the fruit: but in unfavourable feafonsoil'd paper frames are the most effectual, because, being the placed all over the ridge, they defend plants also, as well as the fruit, both from cold and wet; or, in cold wet feafons, if there are any spare gardenframes and lights, these might be placed over the ridges, as foon as they are at liberty in June, July, or August, so to defend the plants and fruit the remainder of the fummer, by shoving on the lights in all unfavourable weather, day or night.

When the fruit is encreased somewhat confiderably in growth, it is proper to turn them every three or four days, that they may swell equally, and each fide have an equal benefit of the

Their ripening is determinable by the appearance of maturity, mentioned in the early crop, observing also the fame rules as there advised in cutting them for table.

Melons are also fruited in great perfection under oiled paper trames, by placing them over those ridges plants which are ridged out in April and May, for they will not fucceed in earlier cropt, but for the crops just mentioned, they are confiderably the most eligible shelters to place over the ridges in the middle or latter end of May, or beginning of June, after the plants have filled the hand-glaffes, thefe being then previoully removed entirely away, and the paper frames placed upon the bed; for these frames being made of due width and proper length to cover the whole ridge, and the paper being well oiled with linfeed-oil, to render it proof against wet, and more pellucid or transparent to admit the rays of light and heat in a proper degree, that they are continued conftantly upon the ridges, whereby the plants are at all times protected from all inclement weather, either wet, wind, cold, or heat, as, although, the paper admits the rays of light, &c. yet it, at the fame time, affords the most agreeable shade from the scorching fun.

These frames are formed either like the roof of a house, or archways, like the tilt of a waggon, four or five feet wide, ten long, and a yard high, framed of thin flips of wood and lath, or broad hoops, &c. but those made ridge-fashion with two floping sides, in the manner of the ridge of a house, are rather the most eligible form, because on one fide may be made two pannels, to open with hinges towards each end, and each pannel about two feet wide, being convenient for giving air, and other necessary work: in either of the above forms the frames are constructed in an open manner, having the ribs or spars, a foot or fifteen inches afunder, or at such diffances as to admit of patting the theets of paper commodioully; but previous to patting on the paper, draw lines of pack-thread, &c. across corner-ways from rail to rail of the frame, drawing other lines interfecting or croffing the first, these being necessary for supporting the paper the more effectually against the power of wet and wind: then having forme firong printing paper, let it be a little damped, that it may not fink in hollows after it is fixed on the frame; therefore, as foon as it is damped, pafte

at on the frame; two large sheets will generally range from bottom to top, passing it securely to the rasters and rails, and so as the middle of each sheet rests upon the intersections of the pack-thread lines; and when the paper and passing is thoroughly dry, brush the outside all over lightly with boiled linseed-oil, then suffer the frame to stand in a dry shed till the whole is persectly well dried before it is used.

But for want of regular made frames, a quantity of hoops or rods might be placed across the ridges of plants archways, flicking both ends into the earth, about one foot afunder, & two high, fo drawing lines of pack-thread along from hoop to hoop, both to fleady the arches, and help to support the paper; then paste a quantity of strong paper in large pieces about three or four sheets in width, and in length proportionable to that of the ridges they are to cover; then oil them with linfeed-oil, and, when thoroughly dry, spread them over the hoop-arches, and fecure them by lines drawn from end to end; and that for the admission of air, and doing other necessary work, one side of the paper is readily turned up at bottom as far as convenient.

In respect to the mode of using either of these paper shelters, the plants are previously to be raised in hot-beds, under frames and lights, exactly at the time and manner as directed for the hand-glass crops, and to be ridged out alfo at the same time and manner there mensioned; observing, that, in default of hand-glaffes, these paper frames may be used as soon as the plants are ridged out; but in this case the ridging out should not be performed till May: but the most successful way is, when there are hand-glaffes fufficient, to place thefe glaffes over the plants at first ridging out, as directed in the hand-glass culture, managing them in the fame way in every respect, till the plants have filled the glaffes with their runners; then remove the glaffes away, and place over the paper frames.

When these shelters are placed over the plants, free air must be admitted in proportion to the temperature of the season, either by opening the pannels less or more, according to the warmth of each day, or by tilting one side of the frames at bottom, &c. for the article of fresh air must not be omitted at all opportunities, particularly when the plants shew fruit, the air being not only necessary to strengthen the plants, but also to affist in the impregnation of the fruit, for the reasons explained in the early cucumber work; and towards the end of June, when the season is warm, the stames may be raised at bottom about four inches.

It is also necessary to defend the plants over the above shelters with mats every night till towards the middle of June; likewise, occasionally, in all hard rains, day or night.

Thefe paper shelters never last but one season, that is, the paper; but as to the frames, they, with care, will continue useful several years, so must be fresh papered every spring, in proper time to be ready to place over the beds.

Melon plants are generally between three and four months from their first appearance till they produce ripe fruit, and they all the time require the con-ftant aid of artificial heat, which, though they are fruited in great perfection in that of dung, i. e. dung hotbeds, yet those of tanner's bark being confiderably of more durable and re gular heat, the plants by that aid may still be fruited to greater advantage, and with less trouble, because, if made entirely of new tan, no lining, or but very little, will be neceffary, nor is there such danger to be apprehended from steaming or violent heat, as in dung hot-beds; but it must be remembered, that the purchase of the tan renders these kind of hot-beds more expenfive than dung, though, if both these materials are obliged to be purchased, and the tan can be obtained within a moderate distance, there is but an inconfiderable difference in the expence.

But, in case of scarcity of new tan for the above purpose, the waste or cast-off bark of the stoves, mixed with a quantity of new, might be used, provided, however, the old tan is not become quite earthy; so mixing one half old to one of new, which will form a moderately strong and durable heat, and will answer for beds made not earlier than the middle of February, or beginning of March.

Or, for the latter crops, beds might be formed entirely of cast-off bark, provided, as above observed, it is not

become

become very earthy, and its fermenting property not quite exhausted; which, if not, when fresh worked up, and formed again into a bed, will renew its heat, though in a moderate degree, therefore should not be used for beds earlier than March or April, and which, if made in a pit formed of post and planking, fo as to admit of a fubftantial lining of hot dung to each fide in fix weeks or two months after making, would be an addititional advan-

tage to the plants.

Observe, that either the above-men-tioned bark-beds for the culture of melons, must be made in some kind of pit, or frame, to confine the bark, which otherwise could not be formed into a bed, or, in default of fuch a pit, one might be formed of post and planking, of width and length for one or more large three-light frames, and three feet and a half deep, to contain that substance of bark, and may either be funk half way in the ground, or not fo much, according as the foil is dry or wet; but it would be most convenient to have it not funk more than a foot, for the advantage of adding a lining of hot dung to the fides, if there should be occasion; I would there-fore observe, that a planked pit, for the culture of melons, may be rather preferable to brick or stone, because if you shall find it necessary to line the beds, by applying hot dung against the outfide of the planking, its heat will readily penetrate sufficiently to recruit the declining heat of the bed; for as the melons are to be planted in the full bed, and not in pots, as practifed to pine-apple plants, there is no stirring up the bark to revive the heat, as in stoves, and a lining may probably be necessary to those beds, where cast-off bark is used, or perhaps sometimes one lining to those beds made of new tan, may be of advantage, just when the fruit is fetting and taking their first growth; on these considerations, contrive the pit fo as to admit of lining the fides almost or quite to the bottom.

The time of year to begin the culture of melons in these fort of hotbeds, is the same as mentioned in dung hot-beds, and the plants should be raifed in a nursery-bed as there directed; and when of the proper age and fixe, as there observed, transplant them into the bark-beds to remain to fruit.

These fruiting-beds should be made a fortnight or three weeks before-hand, to acquire a proper heat in due time for the reception of the plants from the nursery hot-bed, at their proper period of growth. Let the beds be made the full width and length of the pit allotted for them, and three feet at least deep; but if caft-off bark is used, three and a half depth in bark will be requifite. As foon as made, cover the bed with the proper frames and glaffes, to de-fend it from rains; and in about a fortnight it will be arrived to a proper temperature of heat; then earth it at top, as directed for the dung-beds, and the earth being warm, fet two plants with their ball of earth entire, just under the middle of each light, give a little water, and manage them according to

the former directions.

But if the bed is to be made mostly of cast-off bark, as it will be somewhat of a mouldering texture, and of but moderate heat, instead of earthing it as above observed, you may try the fuccess of planting intirely in the bark, without any earth at all. Let the bed be of the above-mentioned dimensions, and covered with the frames and lights, and in about three weeks it will be warm enough either to receive feed, or plants, first making holes in the middle of the bed, one immediately under the middle of each light, fix or eight inches deep, and twelve or fifteen broad, fill them with rotten or finely pounded bark, forming each a little hollow, bason-like, in which either fow feed, and when the plants are a week or two old, thin them to two of the best in each hole, and there let them remain to fruit: or, to make the most of the bed, put in plants raised to a proper age, as in the dung hot-bed culture.

The plants being transplanted into either of the above bark hot-beds, obferve the lights are to be kept constantly on, being careful to give the plants a proper share of warm air at all opportunities, as the weather permits, according to the former rules,

It must be remarked, that the plants will not require much water in thefe hot-beds, as bark continues to support a fine moift heat, of a very agreeable nature to the growth of most forts of plants, fo that the melons will be found to fucceed with a very moderate fupply

of water, and the lefs the better, both for the continuance of the heat of the beds, as well as for the advantage of

plants and fruit.

Should you find the heat of the beds confiderably declined when the fruit is ferting, or taking its first growth, a good lining of hot dung against the outsides of the pit will be very bemessical.

As to faving melon feed, we need only farther observe here, that it should be faved only from the very finest fruit of the respective varieties, & such as have a firm and highly flavoured flesh; this should be particularly observed when the fruit is served at table, and the right seed properly reserved in its own pulp, and sent to the gardener; which, after laying in the pulp a few days, may be washed out, and all the heavy or good seed which fink in the water are to be preserved, dried, and put up for saving.

It will retain its germinative property ten or twelve years, but when from about three to five years old, is in its best perfection for use.

Water MELON. See CITRUL

Melon Thiffle, [Cadus.] This plant is of a very fingular fructure, being shaped like a melon, having neither visible stem, branches, nor leaves, but appears like a large, roundish, sleshy mass, or lump, sitting close to the earth, and throwing down roots to a considerable depth. There are two forts, a larger and a smaller; they are both propagated by seed, but require the assistance of a stove.

MELLET. A dry fcab on a horfes

foot.

MERCURY, [Mercurialis.] Male and female French mercury; the leaves. These stand among the five emollient herbs; and in this intention are fometimes made use of in glysters. A fyrup made from the leaves, given in the dose of two ounces, is said to prove a mild and useful laxatixe.

There is another fort of mercury growing in woods and hedges, which by fome botanic writers, as having the fame virtues with the foregoing, and as more palatable, has been lately found pofferfed of noxious qualities. This may be diftinguished from by its being a perennial plant, larger, having its leaves rough, and the stalk not at all branched. The officinal fort is named

by Linnaus meteurialis eaule brachiato, foliis glabris; the poisonous mercurialis caule fimplicissimo, foliis scabris; it is commonly called dogs mercury.

monly called dogs mercury.

English Mercury, [Some Harricus.]
This is met with by road fides, and in uncultivated places. It is ranked among the five emollient herbs, but rarely made use of in practice. The leaves are employed by the common people for healing steff wounds, cleaning old ulcers, and other like purposes.

Dogs MERCURY. See MERCURY. MET. A ftrike or bufhel.

METHEGLIN. A fiquor made with honey and water, or honey and beer fermented together.

MEZERON. See Spurge LAUREL.

MEU. Ser SPIGNAL.

METER YARD. A measuring staff.

MICE. Field mice are as numerous as those of the house, and the farmer often finds them as troublesome, and sometimes much more so. There are several species of them; but they are all equally his enemies: all feeding upon his seed-corn and pusse in the same manner: and are all to be destroyed by the same means.

Drier lands are more subject to this kind of vermin than those which lie wet; and of all the kinds of sowing, that under surrow most exposes the

feed to them.

In this case, as the furrows will fall formewhat hollow, they afford a shelter to the mice at the time of their com-

mitting all their havock.

The farmer feems to contrive for their feafting and fafety together in this method; for the corn or other feed lies perfectly exposed to them, and they are not exposed to his eye while they are feeding upon it.

In these lands we have with great concern often traced the path of those devourers, and seen all eaten up, or carried away to some little distance: for under the covert of this manner of tillage they will make their nests and granaries as it were in different places; and the seed shall be sound stored up in one of these, that should have covered a great space of ground with its shoot.

The husbandman will by this see a great disadvantage attending that kind of tillage; and he will know in what fields he is most to fear these enemies.

Though

Thought his manner of fowing gives the mice an advantage, the other way does not sufficiently secure the corn from them. When it is sown in the common way and harrowed in, it is better covered; and there is a great deal more trouble for them to get at it : but they are very industrious, and in this case will dig after it, and tear up

and destroy a great deal.

When it is fown under furrow, they begin with it as foon as it is in the ground; but when it is harrowed in, they wait for its first sprout. This gives the farmer an advantage, because he knows exactly when he is to expect them; and it is a great article of fafety to know when to guard against the

danger.

The careful husbandman is not in this case to wait till he sees the shoot of his feed; for the mice have very quick eyes, and they will perceive it a day or two before he does : he is therefore to look to his ground a day or two before the time of its being feen covered with the young fhoot; and then, as he knows the devourers will be about, he is to prepare for their de-Aruction.

Traps are a very improper method of getting rid of these creatures. There is no way well worth his confideration but poison; and happily for him there are drugs which will answer this purpose of poison to these creatures, which are not literally and strictly poison to ourselves. These he is to use, and they will sufficiently answer his purpose. It would be a disagreeable thing to be meddling with ratibane; but there is no harm in handling the ingredients he

In the first place let him consider what fields from their foil are most likely to harbour mice, and in what places he has known them most mischievous. Let him never fow thefe under furrow, for that takes from him all opportunity of attacking his enemies; they work under ground as it were, and will never come into the way of his poifon,

When these fields have been fown otherwife, and harrowed over, the mice must come upon the furface and dig down for the corn, and they will then certainly meet with anything he Jays on the ground for them,

Let him mix up a peck of barleymeal, a pound of powder of white Vol. II. hellebore root, and four ounces of powder of flaves-acre; and when thefe are all mixed together by fitting through a coarfe hair fieve, add han a pound of honey, and as much milk as will work

the whole into a paste.

Let this be broke into pieces, and fcatter'd over the field at the time when the mice are known to be coming. They will eat it greedily, and it is certain death to them. There is nothing in any of the ingredients difagreeabl to the tafte when thus mixed; and every morfel of it will be devoured. The mice will be kept from digging: after the corn; and at the same time killed by the ingredients.

This is the method to be used just at the time of danger; but the farmer who has a field peftered with thefe vermin, will do well to be thinking as other times also of destroying them.

They live at a small depth under ground, and there breed in abundance. The passage into their nest is by a little round hole, and thefe are eafily feen

in dry weather.

On these oscations the farmer should go his rounds with a quantity of the paste before directed; and wherever he fees a hole throw in a piece. A little trouble of this kind taken from time to time in the heat of fummer, when the holes are most conspicuous, would utterly root them out.

MIDDING, A dunghill, MILFOIL, [Milfollum.] Milfoil or yarrow. This grows plentifully about the fides of fields, and on dry commons, flowering greatest part of the fummer. The leaves have a rough bitterish taste, and a faint aromatic smell. Their virtues are those of a very mild aftringent, and as fugh they ftand recommended in harmorrhagies both internal and external, diarrhoeas, debility and laxity of the fibress and likewise in spasmodic hysterical affections. In these cases, some of the Germans have a very high opinion of this herb, particularly Stahl, who ef-teems it a very effectual aftringent, and in his language, one of the most certain tonics and fedatives. Its virtues are extracted in greatest perfestion by proof spirit : water takes up its astringency and bitternets, but little of its arematic flavour; tin dures made in rectified spirit contain the latter, with little of the former.

The flowers of milfoil are confiderably stronger in aromatic flavour than the leaves; in distillation, they yield a small quantity of essential oil, of an

elegant blue colour.

MIL-DEW. Blights and mill dews have been generally taken to be the fame thing, which hath begotten much error, and the ways and means used for the prevention and cure have mifcarried through the ignorance of the dif-Mill-dew is quite another thing from blafting. Mill-dews being caused, as fome fay, from the condensation of a fat and moist exhalation in a hot and dry fummer from the bloffom and vegetables of the earth, and also from the earth itself, which by the coolness and ferenity of the air is condensed into a fat glutinous matter, and falls on the earth again, part whereof rests on the leaves of the oak and other trees, whose leaves are fmooth, and do not eafily admit the moisture into them, as the elm or other rougher leaves do, which mill-dews become the principal food of the bees, being of itself sweet, and eafily convertible into honey.

Other parts thereof rest on the ears and stalks of wheat, bespotting the stalks with a different colour from the natural, being of a glutinous substance by the heat of the sun, and so binds up the young tender close ears of the wheat, that it prevents the growth and compleating the imperfect grain therein, which occasioneth it to be very light in harvest, and to yield a poor lean grain, for which reason many reckon the bearded wheat not so subject to it, as the other, the beards desending the ear

from it.

Some think mill-dews to proceed from vapours arising from the dung, and so falls upon the corn; because lands new dunged are the most subject

to it.

But if, after the mildew falls, a shower succeeds, or the wind blows stifly, it
washeth or shaketh it off, are the only
natural remedies against this distemper.
Some advise in the morning, after the
mill-dew is fallen, and before the rising
of the sun, that two men go at some
convenient distance in the furrows,
holding a cord stretched streight betwixt them, carrying it so that it
may shake off the dew from the tops
of the corn, before the heat of the sun
has thickened it,

It is also advised to sow wheat in open grounds, where the wind may the better shake off the dew, this being looked upon to be the only inconveniency inclosures are subject unto, but it is evident that the field lands are not exempted from mill-dews, nor smut, where it is more than in inclosed lands.

Some fay, that lands that have been fubject to mill-dews many years, have been cured by fowing of foot with, or just after, the corn. See BLIGHT.

Mr. Miller takes the true cause of the mill-dew's appearing most upon plants which are exposed to the east, to proceed from a dry temperature in the air when the wind blows from that point, in which case it stops the pores of plants, and prevents their perspiration, whereby their juices are concreted upon the furface of their leaves; and that concretion being of a sweetish nature, infects are incited thereto. Those infects, finding their proper nutriment, deposit their eggs, and multiply so fast as to cover the whole furfaces of plants, and, by corroding their vessels, preit very probable, that the excrements of these insects may enter the vessels of plants; and, by mixing with their juices, may fpread the infection all over them; for it is observeable, that whenever a tree has been greatly infected by this mill-dew, it feldom recovers in two or three years, and many times never is entirely clear from it after. But he by no means allows thefe infects to be the first cause of this diftemper, as some have mistakenly ima-gined. It is observable, that mill-dews and blights frequently attack only one fort of corn, or fruit, and leave the other species unhurt.

Count Ginanni distinguishes two principal kinds of mill-dew, one of which spots the blades and stems of corn, and dries upon them, without ever producing any powder; but penetrates through their outward covering, and entirely dries them up. This is generally of a pale colour, either reddish, yellowish, purpleish, or blackish, and sometimes a variegated mixture of many colours. The other speedily covers the plant with a moist and thicklish substance, which afterwards becomes dry, and turns into a powder, of one or other of the above-mentioned colours, but most commonly red-

dish or yellowish. This, says he, always fades, corrodes, and separates the outer skin from the plant. The former extends to every species of corn; but the latter is almost peculiar to wheat in the blade; though it is fometimes feen upon oats and barley. Some may perhaps reckon, as a third species of mildew, a yellowith fubstance, or powder, sometimes feen under the membrane of the blades of corn, where itraifes blifters, makes many little holes and cracks, and corrodes the fibres; and perhaps they may not be wrong in accounting it fuch.

He is confident that this distemper is the rubigo of the Latins. See Ho-

NEY-DEW.

MILK. Milk is a fluid separated from the nutritious juice of bodies, called their chyle; deposited by nature in the breafts or udders of female animals, during their pregnancy, and for the nourishment of their young.

After the young is born, it becomes in greater abundance: and it will be prepared and furnished by nature in that plentiful manner, so long as it is fucked by the young, or any other way drawn at times; but when no use is made of it, the fupply ceases; and the milk, as the expression is, dries up ofitfelf.

Milk is very much of the nature of what is called chyle, that is, the nutritious juice separated from our food, and intended for the support and nourishment of our bodies. All our foods tend to the formation of chyle, and the great purpose of nature in their digestion is the furnishing of a sufficient fupply of it; for on this restoration and prefervation of the fabrick depend,

Chyle is a thin white juice, confifting of the finest and most nourishing part of our food; and milk is, properly speaking, nothing more than a thicker and richer chyle: when the two are compared together, there is found but little difference between them; therefore we may very reasonably conclude, that milk not only is made of chyle, but that it is made by a very natural and eafy procedure; for there feems nothing more to have been done than this, that a quantity of chyle has been brought into the glands of the breafts, and there some of its watery parts have been separated from it; and the remainder becoming richer by that fuited to them,

means, has been left there ready to be drawn by the mouth of the young, or otherwise, in the form of what we call

When milk is viewed with powerful glaffes, it does not look an uniform white liquor, as it appears to the naked eye, but is discovered to confist of two different matters; the one white and rich, which is kept separate in round drops, and the other thin and watry: this last is the more large quantity, and the other drops fwim in it.

In the fame manner when we make butter and cheese, we force a separation of those parts, which we could not fee to be diftinct and different in the milk, though this common operation shews they were fo: the rich part makes the butter and cheese, and the other runs off poor and watery in the butter milk

and the whey.

Thefe three parts are, 1. the oily; 2. the curdy; and 3. the watery. The oily are, as we have feen, the buttery parts; the curdy are the cheefy; and

the watery are the wheyey.

Nothing but the force of nature in the body of the animal, could work and blend these perfectly into one rich and nourishing fluid, fit for the tender stomach of the young. We find they are fo mixed there; and that they continue mixed in that manner for some time, after the milk is out of the body; but when they have once separated, either naturally or by art, we shall never be able to mix them fo again. Butter, cheese, and whey, were all contained in the milk, and nature united them in that manner; but all our chymistry will never be able to mix butter, cheefe, and whey, into milk again.

Milk differs extremely in various

creatures, according to their diet, their construction of body, and the particular structure of those parts in which

it is formed.

The first and great end of nature in the production of milk, we have flewn, was for the nourishment of the young; fhe knows, or to use more proper words, God, whose immediate and regular care in the guidance of the world is what we call nature, knows best the structure of those young and tender bodies he forms; and he has accordingly provided, in the breafts and udders of their dams, a nourishment

Thus in all creatures, milk is, as we have shewn, the chyle or nutritive juice of the parent's body, formed into that condition by the separation of its watery parts; but in fome creatures, more of those watery parts are separated, and in others fewer, according to the structure of those veffels; and it must be according to what we fee of their food, that in fome the chyle comes more watry to those glands that separate it, than it does in others: why otherwise should it be, that the milk of the cow should be so rich, and that of the ass so poor, when both eat the grass of the same pasture.

Let not any be surprised at the calling affes milk poor in comparison of cows, from an opinion that it must be richer, because of the use physicians make of it to reltore decayed constitutions: it is because it is poorer they prefer it, for the stomach in those perfons is not able to bear the richer milk

of the cow.

According therefore to what we fee in nature, it is plain that the different construction of body, and different fabricks of the vesses formed for separating and preparing milk, occasion that liquor to be richer in some and poorer in others. This is all the real difference between the milk of one creature and that of another: having premised this, we shall proceed to consider, separately, those several kinds that any way come under the farmer's consideration.

These are principally four; the cows, the asses, the goats, and the sheep: a sifth might be added, for the milk of the mare is used in some places; but the first nated kind is the great and principal concern of the sarmer, and

the support of the dairy.

Nothing can be more rational than the giving such milk as asses, and any other kind that can be borne upon the stomach, as a restorative: for we have shewn already, that milk is only chyle under a particular form; therefore, when the stomach will bear it, it is nourishment ready formed, and fit for smediately mixing with the blood, to answer all the purposes of life.

This is properly a method of restoring nature: it is coming in to her astistance when she is not able to furnish nourishment, by bringing her that of some other animal ready formed, to

supply the place,

As to the preference of affes milk above that of the cow, in the relief of of human kind, the reason is shewn in nature. Let the milk of our own species be compared with that of a cow, and that of an ass; and the affes milk will be found to resemble it much more than the other.

Cows milk is in general by much the richeft of all the kinds we know, and the most profitable: its several products in butter and cheese, being, like its natural condition as milk, preferable to those of all others, not only in quality, but in quantity: two articles which, when they concur, as they do perfectly in this instance, constitute the highest

use and value to the owner,

The milk of the cow is supposed to vary according to the colour of the fkin; but this is an idle observation. There is an old faying among the farmers, that red cows give the best milk; and another, that black cows bring the best calves : but we can, from fair trial, and repeated experience, affure our readers that there is not in the least truth in either of these maxims: he is to look upon them as old wives tales, and no otherwise. We have seen as much and as good milk from black cows, as ever produced from fed; and we may call every butcher to withers, that the value of the calf is not in the least dependent upon the colour of the cow. See Cow.

Milk appears to be a vegetable juice, with little of an animal nature.

New milk mixes uniformly with common water, the mineral chalybeat waters, wines, and malt liquors that are not acid, weak vinous spirits, solutions of sugar, soaps, and neutral falts; but not with oils expressed or distilled. Acids, both mineral and vegetable, coagulate it; as also do fixt and volatile alcalies, and highly restified spirit of wine: the curd made by acids is resolved again by alcaline liquors, as that made by alcalies likewise is by acids. Neutral salts, nitre in particular, preserve it from coagulating spontaneously; and likewise render it less easily coagulable by acids.

The human milk is the fweetest of these liquors, and that of assess next to it: this last is the most dilute of them all: on suffering it to coagulate spontaneously, the curd scarce amounted to two drams from twelve ounces, whilst into fine light flakes which fwim in the

ferum; that of goats milk concretes

that of cows milk was five times as much: the coagulum of affes milk, even when made by acids, forms only

into more compact maffes which fink. There remained | From which water extracted a fweet Upon evaporating twelve faline fubstance, amounting, when of dry matter exficcated, to ounces of drams drams Cows milk 13 14 Goats milk 121 Human milk Affes milk

The faline substance obtained from affes milk was white, and sweet as sugar; those of the others brown or yellow, and considerably less sweet; that of cows milk, the least sweet of all. It appears therefore, that affes milk contains more serum, and much more of a faccharine saline matter, than those of cows and goats; and that the two latter abound most with unctuous gross matter; hence these are found to be most nutritious, whilst the first proves most effectual as an aperient and detergent.

The inspissated residuum of milk, digested with about as much water as was wasted in the evaporation, yields an elegant kind of whey, more agreeable in taste, and which keeps better, than that made in the common manner. This liquor promotes the natural secretions in general, and if its use is duly continued, does good service in scorbutic, and other disorders, proceeding from thick phlegm and obstructi-

ons of the vifcera,

There are confiderable differences in the milk of the fame animal, according to its different aliment. Dioscordeis relates, that the milk of goats, who fed on the scammony plant and spurges, proved cathartic : and examples are given in the Acta Haffnienfia of bitter milk from the animal having eat wormwood. It is a common observation, that cathartics and spirituous liquors given to a nurse affect the child: and that the milk of animals feeding on green herbs, is much more dilute than when they are fed with dry ones. Hoffman carries this point fo far as to direct the als (the animal, whose milk he in all cases prefers) to be dieted according to the disease which its milk is to be drank for,

MILKING. The best and most commended hours for Milking are, indeed, but two in the day; that in the

fpring and fummer, which is the best feafon for the dairy, is between five and fix in the morning, and fix and feven in the evening; and though nice and curious housewives have a third hour between them, as between twelve and one o'clock in the afternoon; yet the better experienced allow not thereof, faying, that two good meals of milk are ever better than three bad ones. In performing the work itself, the woman must fit on the near fide of the cow, gently at first handle and stretch her dugs, and moisten them with milk, that they may yield out the milk the better, and with less pains; neither must she settle herself to milk, nor fix her pail firm to the ground, till the fee the cow fland firm and fure; but be ready, upon any motion of the cow, to fave her pail from over-turning: but when the fees all things answerable to her defires, the shall then milk the cow boldly; and defift not to ftretch and ftrain her teats, till not a drop more of milk will come from her, it being the worst point of housewifery imaginable to leave a cow half milked; for besides the loss of the milk, it is the only way to make a cow dry, and utterly unprofitable for the dairy : neither fhould the milk-maid, while at her work, do any thing rashly or suddenly to affright the cow, or maze her; but as the comes gently, to with all gentleness to depart.

MILK VETCH. Liquorice vetch,

wild liquorice.

Baftara MILK VETCH. See BAS-

MILKWORT. [Polygala.] This is a perennial plant, growing wild in many parts of England. There are feveral species of this plant kept in gardens, which are natives of France, Austria, and America.

MILLET, [Milium.] This grain was originally brought from the eastern countries.

countries, where it is still greatly cultivated, from whence we are furnished annually with this grain, which is by many persons greatly esteemed for pud-

dings, &c.

It must be sown the beginning of April upon a warm dry soil, but not too thick, because these plants divide into several branches, and should have much room; and when they come up, they should be cleared from weeds; after which they will, in a short time, get the better of them, and prevent their suture growth. In August these feeds will ripen, when it must be cut down and beaten out, as is practised for other grain; but when it begins to ripen, it it be not protected from birds they will soon devour it.

MILL MOUNTAIN. See Purging

FLAX.

MILT-PAIN. Is a difease in hogs, proceeding from greediness of eating mass, and is known by their reeling and going on one side; to cure which, give him the juice of wormwood in a

little honied water.

MILTING. Is an evil in beafts, arising from a blow, &c. The figns whereof are, that they will lay themfelves down, rife again prefently, and cannot reft, but fit in pain: The cure is, to take flone pitch, pound it small, and blend the same with ale, saffron, pepper, and give it him, and walk him

a little after it.

MILT-VAST. See SPLEENWORT. MINT, [Mentha.] The leaves of mint have a warm, roughish, somewhat bitterish taste; and a strong, not unpleasant, aromatic smell. virtues are those of a warm stomachic and carminative: in loss of appetite, nauseæ, continual retchings to vomit, and (as Boerhaave expresses it) almost paralytic weaknesses of the stomach, there are few fimples perhaps of equal efficacy. In colicky pains, the gripes to which children are fubject, dycenteries, and other kinds of immoderate fluxes, this plant frequently does good service. It likewise proves beneficial to fundry hysteric cases, and affords an ufeful cordial in languors and other weaknesses consequent upon delivery. The best preparations for these purposes are, a strong infusion made from the dry leaves in water (which is much superior to one from the green herb) or rather a tincture or

extract prepared with rectified fpirit. These possess the whole virtues of the mint: the effential oil and distilled water contain only the aromatic part; the expressed juice only the aftringency and bitterness, together with the mucilaginous substance common to all vegetables.

It is propagated by parting the roots in the fpring, or cuttings, during any

of the fummer months.

There are some people who are very fond of mint sallad in winter and spring, in order to obtain which, they take up the roots before Christmas, and plant them upon a moderate hot-bed close together, covering them with fine earth an inch thick, and cover the bed either with mats or frames of glass. In these beds the mint will come up in a month's time, and be soon fit to cut for that purpose.

When the herb is cut for medicinal use, it should be done in a very dry season, just when it is in flower; for if it stand longer, it will be not near so handsome, nor so well tasted; and if it be cut when it is wet, it will change black, and be little worth; this should be hung up to dry in a shady place, where it may remain until it be used.

Water MINT. [Mentha Aquatica.]

Horsemint.

Horse Mint. See Horse Mint. Pepper-Mint. See Peppermint. Cats Mint. See Catmint.

MISLETOE, [Vifcus.] This is a bufty plant, growing on the trunk and branches of different trees: that met with on the oak is generally preferred, perhaps on account of its being the most rare. It may, however, be propagated by art on any trees by rubbing the berries against the bark.

MIST. A meteor, confisting of gross vapours floating near the surface of the

earth.

The bluish mist, which we sometimes see on our fields and pastures in a morning, though often innocent, yet has been in some places sound to be the actual cause of murrain, and other satal diseases among the horned cattle.

MITHRIDATE MUSTARD, See

MUSTARD.

MOAR-LOVRE. A term used to express a peculiar distemperature of corn, generally comprehended under the common term of a blight. In this case the earth sinks away from the roots

of the corn, and leaves the plant standing in great part above ground with naked roots; these being too weak to support the stalks, the plants fall, and the ears become light. This is a diftemperature peculiar to corn growing on light and loofe lands.

The remedy is this: turn a shallow furrow against the rows, when they are strong enough to bear it, and the mould is fine and dry; the motion of the stalks with the wind will draw in this loofe powder, and it will spread itself equally among all the rows, settle about the roots, and cover them.

MOCK ORANGE. A species of

the Syringa.

MOCK PRIVET, Phillyres. There are feveral species of this plant which are evergeen thrubs, flowering in March. The propagation is by feed, fown in autumn, or by layers in au-

tumn or fpring.

MOLE. These are mischievous subterraneous animals. We see their hills in pastures, where they work under ground at a strange rate, and are very hurtful; but the damage they do to corn is much greater; and frequently comes upon the farmer quite unexpectedly. He knows that the ants and mice will eat the grain when newly fowed, and that the flugs will destroy it when just shot up; but when these times are over, he is at rest on those heads. On the contrary, there is no time at which the mole may not defroy his crop.

This creature, formed for living under ground, preys upon the roots of plants, and is fond, in a particular manner, of those of corn; but beside the quantity they destroy by eating, they damage a vast deal more by undermining the ground. It is hardly to be conceived what havock one way or other a fingle mole will make in a field of corn, or in how little time; one of these creatures will burrow through a third part of an acre in a day; and this perhaps at a time when the corn is half grown.

The drieft lands are the most subject to these animals, but they will get into any; and there is no creature of all the number to whose injuries the farmer is exposed, against which it is so difficult to guard. There is no foreseeing when they will come; but it is very important to know of their being in the ground as foon as possible, in order to stop the

destruction.

The only caution in the farmer's power is to observe whether there are any there at the time of plowing; and if there be, he is to use every possible method of deftroying them: if not, he is to examine whether the lands nearest his own every way be infested by them, or clear from them,

The freer they are the more likely he is to be clear of them; but there is no certainty from this; for there are times when they will come without any possible manner of guesting from whence; and they will fometimes have done irreparable mischief, before it is discovered they are in the place,

The next caution to this, of know ing when to expect them, is the de-ftroying them when found. They are a very defenceless creature, and not very cunning. Their only fecurity is the being hid under the furface; and they betray themselves in that retreat by the manner of their working.

The husbandman, whose crop is

fuffering by them, is to look for the tracks where they have gone; and these he will easily see by the different colour of the new turned up earth.

He is to follow the course of one of these passages; when he has got sight of it, he is to dig cross holes in it, and to watch the going out or com-ing back of the mole. And whereever it is casting, to strike it through with an iron instrument made for that purpose. The traps for catching them are also common, cheap, and of a plain structure. Indeed the destruction of this creature is so easy, and for many are ready to undertake it at a trifling price, that the caution we first gave is the most important; which is, the finding as foon as possible where they are growing mischievous.

In some places the farmers content themselves with driving them out of their fields; and this is to be done by Imoaking them, as other creatures of

a leffer kind are deftroyed.

To this purpose they open their passages in several places, and burn heaps of straw and some brimstone. This will drive the moles out of a corn field speedliy enough; but this is not a fafe or eligible method. It is only

fending them out of one's own ground into one's neighbours, who may in the fame manner drive them back again. This is only a temporary relief; and there is none wife or effectual but their destruction.

MOLTEN-GREASE. A fat or oily disobarge with the dung, which arises from a colliquation, or melting down of the fat of the horse's body, by violent exercise in very hot weather.

It is always attended with a fever, eat, restleffness, starting and tremblings, great inward fickness, shortness of breath, and fometimes with the symptoms of a pleurify. His dung will be extremely greaty, and he will fall into a fcouring; his blood will have a thick skin of fat over it when cold, of a white or yellow hue, but chiefly the latter; the congealed part, or fediment, is commonly a mixture of fize and greafe, which makes it fo extremely flippery, that it will not adhere to the fingers, and the small portion of ferum feels also slippery and clammy. The horse soon loses his stell and fat, which probably is diffolved and absorbed into the blood; and those that survive this shock commonly grow hide-bound for a time, their legs (welling both before and behind, and continue in this state till the blood and juices are rectified; and if this is done not effectually, the farcy, or fome obstinate furfeit, generally follows very difficult to remove.

It the first place bleed plentifully, and repeat it two or three days successively in smaller quantities; two or three rowels should also be immediately put in, and cooling emollient elysters daily thrown up, to abate the sever, and drain off the greasy matter from the intestines. By the mouth give plenty of warm water, or gruel, with cream of tartar, or nitre, to dilute and attenuate the blood; which in this case is greatly disposed to run into grumes, and endanger a total stagna-

tion.

When the fever is quite gone off, and the horse has recovered his appetite, gentle aloetic purges should be given once a week, for a month or six weeks, in order to bring down the swelded legs; but if the purgative ingredient does not exceed half an ounce, or six drams of sine aloes, it only opens the belly gently; and, with other medi-

cines joined with it, paffes into the blood, acts as an alterative, and operates both by urine and perspiration; as will appear by the horse's staling plentifully; and the kindly seel of his kin. To this end give the following, which, repeated for some time, will intirely remove this disorder.

Take of succotrine aloes fix drams, of gum-guaiacum powdered half an ounce, of diaphoretic antimony, and powder of myrrh, each two drams: make into a ball with syrup buckthorn,

Or it may be prepared with an ounce of aloes, fix drams of diapente, and a spoonful of oil of amber.

These will seldom take a horse from his business above two or three days in a week; neither will he lose his slesh or appetite with them, which cannot be obtained by any other method of purging, and gives this greatly the preference in many cases.

Two ounces of nitre mixed up into a ball with honey, and a dram of camphire, will also be found an excellent medicine for this purpose, as it will powerfully attenuate the blood, and promote the due secretions; to which end it should be given every day for a

fortnight or three weeks.

MONOPETALOUS. Formed of one leaf.

MONEYWORT, Sa HERE

MONKEY BREAD, See Sour

MONKSWOOD. Sa Wolf's BANE.

Monk's RHUBARB, [Rumex Alpinus.]
A species of the dock. See Dock.

MOONSEED, [Menispermam.] This is a native of North America, which is propagated by layers and parting the roots.

MOON BLIND. See BLIND.

MOON WORT. See HONESTY.

MOSSES, [Musci.] The plants of this order.

Moss on Trees, is a diffemper of very bad consequence to their increase, and much damages the fruit of the trees of our orchards.

The present remedy is the scraping it off from the body and large branches, by means of a kind of wooden-knife, that will not hurt the bark; or with a piece of rough hair-cloth, which does

very well after a foaking rain. But the most effectual cure is, the taking away the cause. This is to be done by draining off all the superfluous moisture from about the roots of the trees, and may be greatly guarded against in the first planting of the trees, by not set-

ting them too deep.

If trees stand too thick in a cold ground, they will always be covered with moss; and the best way to remedy the fault, is to thin them. When the young branches of trees are covered with a long and shaggy moss, it will utterly ruin them; and there is no way to prevent it, but to cut off the branches near the trunk, and even to take off the head of the tree, if necessary, for it will sprout again; and if the cause be in the mean time removed by thinning the plantation, or draining the land, the young shoots will continue clear after this.

If the trees are covered with mofs, in confequence of the ground's being too dry, as this will happen from either extreme in the foil, then the proper remedy is, the faying mud from the bottom of a pond or river, pretty thick about the root, opening the ground to fome distance and depth to let it in; this will not only cool it, and prevent its giving growth to any great quantity of mofs, but it will also prevent the other great mischief which fruit-trees are liable to in dry grounds, which is, the falling off of the fruit too early.

Moss. A name given to moory or boggy gounds, in many parts of England. These forts of land consist of a turfy surface, below which is a black, moist, spongy earth, which being dug up with spades, almost in the form of bricks, and dried, is what they call peat, and is used as suel in

feveral parts.

The shortest method of all for the improvement of moss, if the ground be designed only for grass, and its situation be such as admits of it, is this: first drain the moss, and if there be heath upon it, burn that off, and make the surface even. Then make a dam at the lowest part, and a sluice, and work the water upon it through the winter. The mud which comes with the land stood will bring a fine sward upon it is two or three years, and be Vol. II.

afterwards a yearly manure; so that it will bear annual cutting, and, besides, be good pasture for cattle, after the sward is become strong enough to bear them.

Mr. Græme found that the improvement of moss may be endangered by draining it too much; for his crops were best where the surface of the water in the furrounding ditches was not above three feet lower than the level of the moss. It will, undoubtedly, be a vast advantage to an improved moss, if the farmer is able to flood it at proper times, by means of a fluice in the lowest part of the furrounding ditch, as mentioned before. This will greatly promote the growth of plants; but should be used with the caution of not letting the water remain too long at a time upon the ground, because, though there will be no danger of its re-converting the foil into a bog fo long as there are channels to carry it off, it will be apt to chill, and thereby hurt the plants.

MOOR. See Bog and Marky Land.
MOTHER of THYME. See Thyme.
MOTHERWORT, [Cardiaca.] This
is common in waste places, and found
in flower the greatest part of the summer. The leaves have a bitterish taste,
and a strong disagreeable smell: they
are supposed to be useful in hysteric dis-

orders, and likewise to promote urine.

MOULD. Earth, foil, loam. The goodness of a mould for the purposes of agriculture and gardening, &c. may be known, according to Mr. Miller, by the fight, fmell, and touch. Those moulds that are of a bright chefnut or hazely colour, are counted the best : of this colour are the best loams, and also the best natural earth ; and this will be the better yet, if it cut like butter, and does not fliek obstinately, but is short, tolerably light, breaking into small clods, is sweet, will be tempered without crufting or chopping in dry weather, or turning to mortar in wet. Next to that the dark grey and ruffet moulds are accounted the best: but the light and dark ash-coloured the worst, such as is usually found on common heathy ground: the clear tawney is by no means to be approved; but that of a yellowish red colour is the worst of all: this is commonly found in wild and

waite parts of the country, and for the most part produces nothing but gofs, furze, and fern, according as their bottoms are more or less of a light and fandy, or of a spewey gravel, or clayey nature. 2. All lands that are good and wholesome, will, after rain, or breaking up by the fpade, emit a good smell. 3. By the touch we may discover whether it confifts of fubstances entirely erenaceous, orclammy; or, as it is expressed by Mr. Evelyn, whether it be tender, fatty, deterfive, or flippery; or more harsh, gritty, porous, or friable.

MOULDINESS. A term applied to bodies which corrupt in the air, from some hidden principle of humidity therein; and whose corruption shews itself by a certain white down, or lanu . go, on their furface, which, viewed through a microclope, appears like a kind of meadow, out of which arises herbs and flowers, fome only in the bud, others full blown, and others decayed, each having its root, falk,

and others parts.

MOUSE-EAR. [Auricula Muris.] This is a low creeping plant, covered with a kind of blackish hairs. It grows wild in dry pasture grounds, and flowers in June and July. The leaves have a rough fubacrfd tafte : They are recommended as aftringents, but prac-

tice pays no regard to them.

MOUSEL-SCAB. Is a diftemper that fometimes attends theep and young teggs; and that comes (as shepherds (fay) where there is great plenty of furrs and gofs, that by eating of the tops and flowers thereof, they prick their lips and mousel, whereby these forts of fcabs are produced; which are healed, by anointing them with fresh-butter ; but some take the juice of plantain and fresh grease boiled together, wherewith they anoint them.

MOUND. A bank or fence of earth. MOW. The pile or collection of corn in the ftraw, placed in a bay of a

MOW-BURNT. Over-heated in the mow for want of being dry,

MOWING. Cutting down with a fcythe, which instrument goes nearer the ground than the reaping hook, and is applied to grass in general, and to barley and oats chiefly. MUCK. Dirt, rubbish,

MUD, properly fo called, is the finest earth, wash'd and worn to a surprizing fineness by the action of water. This is the condition of fine and pure mud: this is fuch as is drag'd out of the bottoms of rivers, where it has been many years collecting, and where fand and all other foulnesses whatsoever are thoroughly wash'd from it.

Mud, in some of its properties, refembles marle. It is the foftest, fat-test, and mellowest of all earthy fubstances after that; and like marle it breaks with the least rains, and crumbles away : fo far they are alike, as also in giving great fertility : but marle is a particular fubftance, and has a lasting quality of enriching land, whereas mud is only mould in a particular form, and its effect is of no great continuance,

The next to the mud of rivers is that of ponds: but this is less pure and fine; it is often clayey, and generally has fome mixture of fand.

The last kind to be named is, that mud which is thrown up in the cleanfing of ditches. . This is the poorest and worst of all : but even the worser forts are not to be rejected or despised; for they have their particular uses, which the very finest would not answer fo well.

The mud of ditches, especially those by road sides, is full of grit and fand blown in with the dust : it is short enough, but wants mellowners.

The first thing the farmer is to do in these matters, is like what he is to do in respect of his marle. He must learn to diftinguish these three kinds of mud by the names of river mud, pond mud, and ditch mud; and then confider, from their nature and from experience, what foils each of them will feverally fuit.

As marle is most used on plough'd lands, mud is most frequently laid on pasture and meadow grounds. But this need not be established as an universal rule. We have feen how marle may be used with advantage on pasture grounds; and mud will also help many

corn lands.

Marle is commonly used alone, and mud with other Ingredients; but in fome inftances marle may be mix'd alfo; and in feveral cases mud may be best used alone.

From

From the different nature of the mud it is qualified to answer different purpofes. River mud is proper to give fertility, and nothing else : for its richness is all its character. Pond mud will enrich, and at the same time give a body to the foil from the clay it ufually contains; and ditch mud, though it will less enrich, will ferve better than when mud is to be laid on a plow'd

land, this is usually the kind,

From the confideration of their nature, the farmer will be led to a general notion of their use, and the lands to which they are fuited. Thus the river mud is proper for meadows and pastures of a mellow foil, that want nothing but a recruit of that fine mould, which the feveral growths have wasted and drawn forth; pond mud is best where the soil is too light and crumbly; and ditch mud is preferable to both on a clayer ground. Mud, especially that out of rivers,

has this particular quality, that it mixes in a favourable manner with the finer part of dung. This we have obferved feveral times in meadows, After having given them a fprinkling of mud and dung mix'd together, and a few showers, falling on the ground, the strawy part has been washed clean, and nothing but that remaining the mud and the rich part of the dung being wholly gone down into the land: and the next crop has sufficiently found their effects.

People who fludy the growth of plants, talk greatly of the value of virgin earth, that is, earth on which nothing ever grew. River mud is the nearest this virgin earth in its nature

of any thing whatever.

We advise the farmer who has dry pastures, whether they be of a stony, gravelly, or fandy nature, to use this manure preferably to all others; but let him observe the following directions:

If the land be entirely of a loofe nature, let him use the pond mud, mix'd with rich well-rotted dung; and lay it on in a good round quantity.

If the foil be mellow, and only require to be recruited and put in heart, after feveral growths that have exhaufted it, let him mix pure river mud with the dung of poultry or sheep, and

featter this lightly over the ground, A very little of this answers the purpose; and it is best to use a little at a time, and repeat it often,

If the foil be clayey, let him take the mud of ditches, and make a mixture of it with chalk and notten dung : this, being spread tolerably thick, will break and mellow the ground, as well as give it warmth and richness.

MUGWORT, [Artimifia.] This plant grows plentifully in fields, hedges, and waste places, throughout England; and flowers in June. In appearance it fomewhat refembles the common wormwood: the difference most obvious to the eye is in the flowers, those of wormwood hanging downwards, whilft the flowers of mug wort fland erect. The leaves of this plant have a light aromatic fmell, and an herbaceous bitterish taste. are principally celebrated as uterine 8 antihysteric : infusion of them is sometimes drank, either alone or in conjunction with other substances, in suppressions of the menstrual evacuations. This medicine is certainly a very mild one, and confiderably less hot than most others to which these virtues are attributed : in some parts of this kingdom, mugwort is in common use as a pot-herb.

MULBERRY, [Morus.] The species are, 1st. The common mulberry, which is cultivated for the delicacy of its fruit. It grows naturally in Persia, from whence it was first brought to the fouthern parts of Europe, but is now become common in every part of Europe where the winters are not fevere; for in the northern parts of Sweden thefe trees will not live in the open air; and in feveral parts of Germany they are planted against walls, and treated in the fame way as the Peach, and other tender fruits, in this country. 2d. Virginia mulberry, branching like the nettle-tree, having very large leaves. This tree grows to the height of thirty or forty feet. It fends forth many large branches; and the bark of the young shoots is of a blackish colour. The leaves are larger than the common mulberry, and rougher, though in other respects they somewhat resemble them. It produces plenty of katkins, in shape like those of the birch-tree; and the female flowers are succeeded

by a dark reddift fruit. This is a very scarce plant at present, notwithstanding it bears the feverity of our climate extremely well. 3d. Mulberry with a white fruit. This tree will grow to a large fize, and is very proper for walks and avenues, or for clumps or standards, either in fields or parks. The leaves are of a clear light green, and the fruit is of a paler colour than any of the other forts, which makes it take the name of the white mulberry. This tree possesses the peculiar property of breeding no vermin, either when growing or cut down; neither does it har-bour any caterpillar, the filk-worm excepted. This species is cultivated for its leaves in France and Italy to feed filk-worms; and, when raifed for that use, the tree should not be suffered to grow tall, The leaves should be shorn off together with the tender twigs, which injures the plant much less than pulling them by the hand, This kind should be raised from seeds procured from the fouth of France or Italy. 4th. Mulberry with a green fruit, whose wood dyes a sulphur colour. Fustick wood. This tree is better known by the title of Fuftick, which is given to the wood, than by its fruit, which is of no estimation. It grows naturally in most of the islands in the West-Indies, but more plentifully at Campeachy, where it abounds greatly. This wood is one of the commodities exported from Jamaica, where it grows in greater plenty than in any other of the British islands .-- This tree, in the countries where it grows naturally, rifes to the height of fixty feet and upward. The bark is of a light brown colour, with fome shallow surrows. The wood is firm, folid, and a bright yellow. It fends out many branches on every fide, covered with a white bark, and garnished with leaves about four inches long, which are broad at their base, and indented at the footstalk, where they are rounded; but one fide is broader than the other, so that they are oblique to the foot-stalk; these diminish gradually, and end in acute points; they are rough like those of the common Mulberry, of a dark green, and stand upon short foot-stalks. Toward the end of the young branches come out fhort katkins of a pale herbaceous colour; and in other parts of the same branches the fruit is pro-

duced, growing upon thort foot-stalks. The fruit is as large as a nutmeg, of a roundish form, full of protuberances like the common Mulberry, green within and on the outfide, and of a luscious fweet taste when ripe. This species is too tender to thrive in this country, unless preserved in a warm stove. There are several of the plants now growing in the Chelsea garden, which were raised from seeds sent from Jamaica by William Williams, Esq; with many other curious forts, which are natives of that island. The seeds of this plant come up freely on a hot-bed; and when the plants are fit to remove, they should be each planted in a separate fmall pot filled with fresh light earth, and plunged into a hot-bed of tan-ners' bark, and shaded from the sun till they have taken new root. Let them be treated in the fame way as other plants from those hot contries, always keeping them in the tan-bed in the stove, where they will make good progress. These plants retain their leaves great part of the year in the stove. 5th. Mulberry with hand-shaped leaves and prickly fruit. This fort grows naturally in China and Japan, where the inhabitants make paper of the bark. They cultivate the trees for that purpose on the hills and mountains, much after the same manner as Ofiers are cultivated here, cutting down the young shoots in autumn for their bark. A few years ago there were several of these trees raised in the garden of his Grace the Duke of Northumberland from feed; and, when removed into the open air, bore the weather without fhelter. This plant makes very strong vigorous shoots but seems not to be of tall growth, for it fends out many lateral branches from the root upward. The leaves are large, fome of them are entire, others, are deeply cut into three, and some into five lobes, especially while the trees are young, dividing in form of a hand. They are of a dark green, and rough to the touch, but of a pale green, and fomewhat hairy on their under fide, falling off on the first approach of frost in autumn, as do those of the common Mulberry. The defcription which Kampfer gives of the fruit is, that they are a little larger than peafe, furrounded with long pur-

ple hairs, are composed of acini or protuberances, and, when ripe, change to a black purple colour, and are full of fweet juice. 6th. India Mulberry. This kind grows naturally in India, where it becomes a large tree. It hath a foft, thick, yellowish bark, with a milky juice like the Fig, which is aftringent. The branches come out on every fide, and are garnished with oblong, oval, leaves, standing upon short foot-stalks. Both fides of these leaves are equal, but their edges are unequally fawed. They are rough, of a dark green on their upper fide, but pale on their under, standing alternately on the branches. The flowers come out in round heads at the foot-stalks of the leaves on each fide the branches ; they are of an herbaceous white colour; the male flowers have four stamina; the female flowers are fucceeded by roundish fruit, which are first green, afterwards white, and when ripe turn to a dark red colour .- The plants are too tender to live out of a stove in this country. The Mulberry is of the class and order Monoecia Tetrandria, which contains those plants that have male and female flowers at feparate distances upon the same plant, the male flowers having four stamina. It is generally observed, that the old Mulberry-trees are not only more fruitful than the young, but their fruit is much larger and better flavoured: fo that where there are any of thefe old trees, it is the best way to propagate from them, and to make choice of those branches which are most fruitful. The usual method of propagating these trees, is by laying down their branches, which will take root in one year, and are then separated from the old trees; but as the most fruitful branches are often fo far from the ground as not to be layed, unless by raifing of boxes or balkets of earth upon supports for this purpose, so the better way is to propagate them by cuttings, which, if rightly chosen and and fkilfully managed, will generally fucceed: And in this method there will be no difficulty in having them from trees at a diffance, and from the most fruitful branches. These cuttings should be the shoots of the former year, with one joint of the two years wood to their bottom; the cuttings

should not be shortened, but planted their full length, leaving two or three buds above ground. The best season for planting them is in March, after the danger of frosts is over. They should be planted in light rich earth, pressing the ground pretty close about them; and if they are covered with glaffes, it will forward their putting out roots; but where there is not fuch conveniency, the ground about them should be covered with moss to prevent its drying; and where this is carefully done, the cuttings will require but little water. If the cuttings succeed well, and make good shoots, they may be transplanted the following fpring into the nursery, where they should be regularly trained to stems by fixing down stakes, to which the principal shoots should be fastened; and most of the lateral branches should be closely pruned off, leaving only two or three of the weakest to detain the fap, for the augmentation of the ftem; for when they are quite divefted of their fide-shoots, the sap is mounted to the top, so that the heads of the trees grow too fast for the stems, and be-come too weighty for their support. After four years growing in the nur-fery they will be fit to transplant where they are to remain; for these trees are transplanted with greater safety while young, than when they are of a large

If the cuttings are planted in a bed fully exposed to the fun, it will be proper to arch the bed over with hoops, that they may be shaded with mats in the heat of the day during the spring, till they have put out roots; after which, the more they are exposed to the fun, the better they will succeed, provided the ground is covered with moss or mulch to prevent its drying; for the fun will harden the shoots, whereby the plants will be in lefs danger of fuffering by the early frofts in autumn; for when these are in a flady fituation, they are apt to grow vigoroully in fummer; and, being replete with moisture, the early frosts in October frequently kill their tops, If the following winter proves severe, they are often killed to their roots, and fometimes are entirely deftroyed. Mr. Miller recommends the cuttings to be planted on a hot-bed; and he

informe

informs us, that he was led to this improvement by observing some sticks of Mulberry-trees which were cut for forks, and thrust into the hot-bed to fasten down the vines of cucumbers; which, although they had been cut from the tree a considerable time, yet many of them put out roots and shot out branches; so that when any person is in haste to propagate these trees, if the cuttings are planted on a moderate hot-bed, they will take root much some than in the common ground.

This tree delights to grow in a light earth, such as is in most of the old kitchen gardens about London; for in some of those gardens there are trees of a very great age, which are very leastly and fruitful, and their fruit is larger and better flavoured than that of younger trees. Dr. Hunter says, he has never yet seen any of these trees which were planted in a very stiff soil, or on shallow ground, either upon clay, chaik, or gravel, which have been healthy or fruitful; their stems and branches are generally covered with moss, so that the little fruit which they produce, is small, ill tasted, and late before it ripens.

If these trees are planted in a situation where they are desended from the strong south & north-west winds, it will preserve their fruit from being blown off; but this shelter, whether it be trees or buildings, should be at such a slistance as not to keep off the sun; for where the fruit has not the benefit of his rays to diffipate the morning dewa, it will turn mouldy and rot upon the

MULCH. A fort of strawey dung, somewhat moist, and not rooted, and is useful in gardening, to protect the rotts of new-planted choice trees or strubs from severe frost in winter and from being dried by the serce sun or drying winds in spring & summer, before they are well rooted; for both of which purposes, it is spread evenly on the surface of the ground round the stem of the tree, as far as the roots extend, about three or sour inches thick, but which may be augmented in winter if the severity of the srost render it necessary.

MULE. The mule has the good qualities of the ass without its bad ones. It is as patient of fatigue, and

as capable of enduring bunger as the ais; but then it is as trackable as the horse; and is sufficiently swift of soot for any common service. When properly bred it is also a very handsome creature: and it is indeed so well fitted for so many different services, that nothing can be more worth while than raising them in all places where they will thrive.

The mule is often of the fize of an ordinary horfe, fome fixteen or feventeen hands high. They are very ftrong, and very fure-footed. This is the quality for which they are valued in many parts of Europe, where the roads are mountainous and ftony; they will go with the greatest fafety over these, where a horse would break his neck.

They perform excellently also in draught; and will travel many weeks together with fix or seven hundred weight on their backs, without any fign of uncommon fatigue.

The mule is bred from the copulation of an ass and a mare. Those for travel and shew are bred from very large he-affes and Spanish mares : these are tall and stately, their colour usually inclining to black, and they are very handsome. But a larger and stouter kind are bred from the same affes, and large Flanders mares. These are frequently feventeen hands high; and as large fet as our common coach horfes. They are much it ronger than horses of the same size, and will bear greater hardships, and be fed at much less expence. At the fame time they are much less subject to distempers. These are great recommendations of this creature; and may flew how much it would be to the advantage of the farmer always to have them in his yard.

They are extreamly fit for the faddle, as well as for these laborious employments: they are very manageable, and walk and trot very easy. If it should ever become a custom to breed them in England, they may be suited to the services for which they are design'd, by the choice of proper mares, for they take after them. Those for the road should be bred from light made mares; and those for cart, plough, and the like, from the larger bodied and stouter kinds.

There is a very substantial reason why we should breed them in England, which

which is, that fuch as are bred in colder countries are always better and longer lived than those in hot. As to the objection fome have raised of their being vicious, it is a complaint only made where there are but few of them, and those ill taken care of; for where they are common, and are treated in the manner as horses, they are as inoffenfive,

Besidesthe mule already mention'd, which is bred between the ass and the mare, and is a light, beautiful, and lively creature; there is another kind propagated in some places, raised between the horse and the she-as; but

this is an inferior kind.

It has been observ'd, that foals take more after the nature of the female than the male parent; and the fame thing is feen very plainly in the breed of mules: those between the as and the mare, partaking of the nature of the mare, being beautiful, lively and fwift; and only inheriting the good qualities of the afs, his patience, ftrength, and perseverance under fatigue: while on the contrary, those bred from a horse and a she-ass, are of the ask kind, dull, heavy, fluggish, illmade, and fmall. There is very little temptation to breed these any where, because the others may be had with as little trouble. Let the husbandman therefore who shall think of breeding mules among his stock, take care that he dees not fall into the mistake of fupposing that 'tis the same thing, so one parent be of the afs kind, which of the two it is: he here fees the dif-

As the mare is to be fuited to the fervice for which the mule is intended, great care is to be taken to have a proper als. He should have all the marks of a good one, and above all things he must be large. The fine mules we see, in other parts of Europe, are bred from the tallest affes that can be procured; which they purchase at a vast price, and out of their tinest mares, The mare is put into a hollow place rail'd in and the afe has the advantage of higher ground in covering.

We see in this cricumstanec of the mule, the abhorrence of nature to moniters, or animals produced of mix'd breeds. It was believ'd among the antients, that new forts of favage

creatures were every year productd'in Africa, from the copulation of different kinds, and the increase of those monfters fo produced; but this is an error; and we fee in the instance of the mule, that two creatures of a different, tho like kind, are very difficultly brought to copulate; and that when they are, altho' they produce a creature different from either, as the mule is both from the horse and als, yet that creature is not able to propagate its kind again.

The pretence that there is any where a fort of mules that produce their own kind one among another, is as falle as the new species of montters in Africa. The horse and as are difficultly got together, in order to the production of this animal; but when that is done, there is no carrying the

power any farther.

The mare is always averfe to receive the afs, and in the fame manner the the-als is unwilling to admit the horse to copulation; infomuch that where they breed mules frequently, it is a practice to make the ass colt feel a mare: and the mare foal fuck an afs in order, as is imagin'd, to make them in some degree partake of the nature of either. This has no real effect, but it is named to shew how sensible the breeders of mules are, that those creatures do not go freely and willingly together: and it is certain, that there is not in nature any power of the mules generating its own kind again.

MULLEIN. [Verbafcum.] This is met with by road fides, in ditches, and amongst rubbish; and flowers in July. It is faid to foften tumours, cool is flammations, and eafe pains, and is recommended in distempers of the breaft, coughs, and spitting of blood. There are many species cultivated in the gardens of the curious.

MURE. The cake of the apples

after preffing.

MURRAIN. The murrain is principally caused from a hot dry season of the year, or rather from fome general putrefaction of the air, or from the infection of other cattle, from cattle finelling to carrion, and licking of the bones; from foul food, as overflown hay, grass rotted by the long standing of water on it in wet fummers; which

fort of food is much better to rot on the ground than to be made use of, All these things beget an inflammation in the blood, and cause a swelling in the throat, which in little time fuffo-

cates the cattle.

The figns of this difeafe are, a hanging down of the head, gum at the eyes as big as your finger, going weakly, staggering, the head swelling very big, the breath short, the heart beating, with rattling in the throat; and if you put your hand into his mouth, and find his breath very hot, his tongue thining, he hath the diftemper very strong. If he be taken backward, he will be very stiff, and his guts rumble

If any of your cattle are infected, speedily let both sick and well blood, and drench them. The following receipt we have not had the opportunity to try, but it hath been much recom-

mended :

Take diapente a quarter of an ounge, dialphera, London treacle, mithridate, and rhubarb, of each the quantity of a put; of faffron a fmall quantity, worm-wood, red fage, of each an handful, and two cloves of garlick: boil all together in two pints of beer till it comes to a pint and a half; give it lukewarm, when he is fafting; keep him very warm, and give him a math of ground malt, and let him drink warm water a week, & fometimes boiled oats. If you can make him fweat he will do well: if one drink will not do, give him another three days after. Half the proportion will do for a cow.

MUSHROOMS, are, by many per-fons, supposed to be produced from the putrefaction of the dung, earth, &c. in which they are found, but notwithstanding this notion is pretty generally received amongst the unthinking part of mankind, yet by the curious naturalists they are esteemed perfect plants, tho' their flowers & feeds have not as yet been perfectly discovered.

The true Champignon, or Mushroom, appears at first of a roundish form like a button; the upper part of which, as also the stalk, is very white, but being opened, the under part is of a livid flesh colour; but the fleshy part, when broken, is very white: when these are suffered to re-

large fize, and explicate themselves almost to a flatness, and the red part underneath will change to a dark colour.

In order to cultivate them, if you have no beds in your own, or in neighbouring gardens, which produce them, you should look abroad in rich pastures during the months of August and September, until you find them (that being the feafon when they are naturally produced;) when you should open the ground about the roots of the Mushrooms, where you will find the earth, very often, full of fmall white knobs, which are the offsets, or young Mushrooms; these should be carefully gathered, preserving them in lumps with the earth about them; but as this fpawn cannot be found in the pasture, except at the season when Mushrooms are naturally produced, you may probably find some in old dunghills, especially where there has been much, litter amongst it, and the vet hath not penetrated it to rot it; as likewise by searching old hot-beds it may be often found; for this fpawn has the appearance of a white mould, shooting out in long strings, by which it may be easily known, whereever it is met with: or this may be procured by mixing fome long dung from the stable, which has not been thrown on a heap to ferment; which being mixed with strong earth, and put under cover to prevent wet getting to it, the more the air is excluded from it, the fooner the fpawn will appear; but this must not be laid fo close together as to heat, for that will deftroy the fpawn: in about two months after the fpawn will appear, especially if the heap is closely covered with old thatch, or fuch litter as hath lain long abroad, fo as not to ferment, then the beds may be prepared to re-ceive the spawn: these beds should be made of dung, in which there is good store of litter, but this should not be thrown on a heap to ferment, that dung, which hath lain fpread abroad for a month or longer, is best; these beds should be made on dry ground, and the dung laid upon the surface; the width of these beds at bottom should be about two feet and a half, or three feet, the length in proportion to the quantity of Mushrooms defired; main undisturbed, they will grow to a then lay the dung about a foot thick, covering it about four inches with strong earth. Upon this lay more dung, about ten inches thick; then another layer of earth, still drawing in the fides of the bed, fo as to form it like the ridge of a house, which may be done by three layers of dung and as many of earth. When the bed is finished, it should be covered with litter or old thatch, to keep out wet, as also to prevent its drying; in this fituation it may remain eight or ten days, by which time the bed will be in a proper temperature of warmth to receive the fpawn; for there should be only a moderate warmth in it, great heat destroying the spawn, as will also wet; therefore when the spawn is found, it should always be kept dry until it is used, for the drier it is, the better it will take the bed. Mr. Miller says, he had a parcel of this spawn, which had laid near the oven of a flove upward of four months, and was become fo dry, that he defpaired of its fucces; but never had feen any which produced so foon, nor in so great quantity as this.

The bed being a proper temperature for the spawn, the covering of litter should be taken off, and the sides of the bed fmoothed; then a covering of light rich earth, about an inch thick, should be laid all over the bed, but this should not be wet; upon this the spawn should be thrust, laying the lumps two or three inches afunder; then gently cover this with the fame light earth, about half an inch thick, and put the covering of litter over the bed, laying it so thick as to keep out wet, and prevent the bed from drying: when these beds are made in the spring or autumn, as the weather is in those feafons temperate, fo the fpawn will then take much fooner, and the Mushrooms will appear perhaps in a month after making: but those beds which age made in fummer, when the feafon is hot, or in winter, when the weather is cold, are much longer before they produce.

The great skill in managing of these beds is, that of keeping them in a proper temperature of moisture, never suffering them to receive too much wet: during the summer season, the beds may be uncovered to receive gentle showers of rain at proper times; and in long dry seasons the beds should be

Vot. II.

now and then gently watered, but by no means fuffer much wet to come to them; during the winter feafon they must be kept as dry as possible, and so closely covered as to keep out cold. In frosty or very cold weather, if some warm litter shaken out of a dung heap is laid on, it will promote the growth of the Mushrooms; but this must not be laid next the bed, but a covering of dry litter between the bed and this warm litter; and as often as the litter is found to decay, it should be renewed with fresh; and as the cold increases, the covering should be laid so much thicker. If these things are observed, there may be plenty of Mushrooms produced all the year; and those produced in beds are much better for table than any of those which are gathered in the fields:

A bed thus managed, if the fpawn takes kindly, will continue good for feveral months, and produce great quantities of Mushrooms; from these beds, when they are destroyed, you should take the spawn for a fresh supply, which may be laid up in a dry place until the proper season of using it; which should not be sooner than five or six weeks, that the spawn may have time to dry before it is put into the bed, otherwise it will not succeed well.

Sometimes it happens, that beds thus made do not produce any Mushrooms till they have lain five or fix months, so that these beds should not be destroyed, though they should not at first answer expectation; for we have frequently known these to have produced great quantities of Mushrooms afterward, and have continued a long time in persection.

MUSK, [Abelmoschus.] This plant is a native of the West-Indies propagated by seeds sown on a hot-bed, and may be treated as the Amaranth.

Musk Hyacinth. See HYACINTH.
Musk Melon. See MELON.

MUST. New wine or wort before

MUSTARD, [Simpis.] The species are, 1. white mustard; 2. black mustard; 3. Field or Durham mustard. The two first flower in June, and the feeds ripen in July and mugust; the other stowers in May, and the feeds ripen in June. To save the feed for garden use, sow it on an open spot of

in drills a foot afunder, or broad-cast all over the furface, and let the plants run up to stalk, and they will furnish

ripe feeds in August.

To raise the plants for the seed for Mustard, they should be fowed in the fpring, any time in March, in some open fituation either in a kitchen-garden, or in the open fields, where large quantities are required for fale; in either case, having digged or ploughed the ground, then fow the feed broadcaft all over the furface, and rake or harrow them in lightly, or fow it in shallow drills a foot afunder. They will foon come up, observing, that when the plants have four or more leaves an inch or two broad, those fown in the broad-cast way should be hoed and thinned, leaving them ten or twelve inches afunder, and cut up all weeds, repeating it once or more if necessary; after this the plants will foon spread and cover the ground, and shoot fast up to stalks for flowers and seed, which will ripen in July or August, and the third probably in June, when the stalks should be cut or pulled up, and threshed out for ufe.

Heage MUSTARD. See HEDGE

MUSTARD.

Mithridate Mustard, [Thlafpi.] A biennial plant that grows among corn, or the fides of dry banks in many parts of England, which dies foon after it has perfected his feeds. There are feveral species, annuals and biennials, cultivated in botanic gardens. They are propagated from feeds.

Baftard MUSTARD, See BASTARD. Baftard Mithridate MUSTARD. See

BASTARD,

Treacle MUSTARD. Mithridate muftard. The feeds have an acrid biting tafte like the common mustard.

MYROBALANS, [Myrobalani.] Dried fruits brought from the East Indies; their outward part, freed from

the flone.

Fivekinds of myrobalans were formerly directed as officinals; 1. The yellow; 2. 'The chebule; 3. The Indian or black; 4. The belliric; 5. The emblic.

All the myrobalans have a low degree of purgative virtue. They have also an astringent quality, discoverable by the tafte, from their use among the

ground in March or April, either thinly Indians for tanning leather, and from their striking a black colour with chalybeate folutions; in confequence of this, they are supposed to strengthen the bowels after their operation as a cathartic is over. Nevertheless their purgative virtue is fo inconfiderable. that practitioners have for a long time laid them entirely aside in that intention; and the college of Edinburgh, as well as that of London, have now rejected them from the catalogue of officinal fimples.

MYRRH, [Myrrha.] Is a concrete gummy-refinous juice brought from the East-Indies, in glebes or drops, of various colours and magnitudes. The various colours and magnitudes. best fort is of a brown or reddish yellow colour, fomewhat transparent; of a lightly pungent, bitter tafte, with an aromatic flavour, though not fufficient to prevent its proving naufeous to the palate; and a strong not difagreeable fmell. The medical effects of this aromatic bitter are, to warm and strengthen the viscera, and dissolve thick tenacious juices: it frequently occasions a mild diaphoresis, and promotes the fluid fecretions in general.

Hence it proves serviceable, in languid cases, diseases arising from a fimple inactivity, those female disorders which proceed from a cold, mucous, fluggish indisposition of the humours, suppressions of the uterine discharges, cachectic diforders, and where the lungs and thorax are oppressed by viscid phlegm. Myrth is likewise supposed in a peculiar manner to refift putrefaction in all parts of the body; and in this light stands recommended in malignant, putrid, and pestilential severs, and in the small-pox, in which last it is faid to accelerate the eruption.

Rectified spirit extracts the fine aromatic flavour and bitterness of this drug, and does not elevate any thing of either in evaporation : the gummy fubstance left by this menstruum has a disagreeable taste, with scarce any thing of the peculiar flavour of the myrrh: this part diffolves in water, except fome impurities which remain. In distillation with water, a considerable quantity of a ponderous effential oil arifes, refembling in flavour the original drug. Myrrh is the basis of an officinal tincture, and gives name to a compound tineture, clixir, pow-

der, and troches. . It is an ingredient in the aloetic wine or elixir proprietatis, the gum pills, Rufus's pills, stomachic pills, mithridate, theriaca, and theriaca Edinensis.

MYRTLE, [Myrtus.] The species are, 1. The common myrtle, the varieties of which are, the broadleaved Roman, the broad-leaved Dutch. the orange-leaved Spanish, the common upright Italian, Portugal acute-leaved, box-leaved, rosemary-leaved, thymeleaved, nutmeg, broad-leaved nutmeg, criftated, or cock's-comb, frequently

called bird's-nest Myrtle.

They are all beautiful ever-green fhrubs of exceeding fragrance; exotics originally of the fouthern parts of Europe, and of Asia and Africa, and confequently in this country require shelter of a green-house in winter : all of which, though rather of the smallleaved kind, have their foliage closely placed, remain all the year, and are very floriferous in fummer; and when there is a collection of the different forts, they afford an agreeable fource of variety with each other; they therefore claim univerfal efteem as principal green-house plants, especially as they are all fo eafily raifed from cuttings, and of fuch eafy culture, as to be attainable in every garden, where there is any fort of green-house, or gardenframes furnished with glaffes for protecting them in winter from frost; but fome of the broad-leaved forts are fo hardy as to succeed in the full ground, against a fouth-wall and other warm exposures all the year, by only allowing them shelter of mats occasionally in fevere frosty weather: fo that a few of thefe forts may be also exhibited in a warm fituation in the shrubbery: observing, however, all the forts are principally to be considered as green-houseplants, and a due portion of them must always remain in pots to move to that department in winter.

temperature, as natives of the Indies; but there are not more than the four following forts commonly met with in. the English gardens, all of which are beautiful ever greens, with larger leaves earth without artificial heat, or by aid then the Common Myrtles and are of hot-beds; but by the latter you may

mostly strong aromatics. 1. Ceylon white-berried Myrtle,

2. Pimento, or Jamaica all-spice tree. This species is wholly an admirable

fine aromatic, its leaves are remarkably fine scented; and its fruit is that valuable spice, Jamaica pepper, or allfpice, fo called, because it is supposed to partake of the odour and tafte of most other spices. The tree grows in great abundance in the island of Jamaica, where its fruit is made a confiderable branch of trade; is generally gathered a little before it acquires full growth, and dried in the fun ten or twelve days; it is then packed up ready. for exportation to Europe.

3. Diœcious American Myrtle. . Brafilian Inodorus Myrtle,

All these five species of Myrtle are exotics of the fhrub and tree kind. though in this country, as being confined in pots, the largest of them affume only the growth of moderate shrubs. The first species, Common Myrtle, is confiderably the most noted fpecies of the genus in this country; where in most of our green-house collections one or other of the varieties is found in tolerable plenty; but all the varieties of it highly merit notice. The other four species are rare in England, they however are retained in many curious gardens, in the flove collection, more particularly the Pimento, which is a very beautiful odoriferous evergreen, and exhibits a fine variety in the stove at all feafons: in short, all the fpecies, both green-house and stove kinds, have a pretty effect as evergreens, and fome of the forts flower very ornamentally, particularly of the Common Myrtle,

The propagation of the Common Myrtle and varieties is effected abundantly by flips or cuttings, also by layers; but as the former strike freely, it is the most eligible method for raising any confiderable quantity, as also the handfomest plants, which may be struck either in natural earth, or by aid of hot-beds, to bring them more forward.

The young shoots, either of the same There are several species of the stove or former year's growth, of from about two or three to five or fix inches long, either flipped or cut off, are the proper parts for planting; and, as above faid, may be ftruck either in natural greatly facilitate the rooting and first effort of growth. By either method: the work may be performed any time from March or April until August, though L 3

though June or July is the most common feafon practifed, especially when intended to use the shoots of the same year, which are generally in prime order in July, and often firike freely that year without aid of hot-beds; the young shoots of the former year will also often strike tolerably, especially if planted in fpring or early in fummer, or by aid of hot-beds may be made to strike root readily at any time in the spring or summer season. By aid of a hot bed, however, all the forts, both of one or two years shoots may be greatly facilitated in rooting : a dung hot-bed under common frames and lights will do, though a bark hotbed of a stove, &c. is considerably the most eligible and effectual, and may be readily used any time in spring and fummer for this purpole; and by which affistance vast numbers of cuttings may be ftruck with the utmost facility in a fort time, with but little trouble; and plants thus struck in spring or early in fummer, may be fo much forwarded as to form pretty little plants the same year, and be fit to pot off separately early in autumn. We will, however, exhibit feparate directions for both methods, i. e. striking them in natural earth, and by hot-beds.

First, by striking them in natural earth: we noticed above, that the planting might be performed any time from March till August; observe in respect to this, that if you would begin In fpring, or early in fummer, you must chuse principally the shoots of the former year; and if you do not begin planting till June or July, but particularly the latter month, the young shoots of the year will be arrived at a proper growth, and will root freely. Observe in chusing the shoots, either of the former or fame year, to chuse the straight clean growth, of from about two or three to four or five inches length, and as robust as possible; which diveft of the lower leaves, two parts in three of their length, they are then ready for planting; then having some large wide garden-pots, or rather flat wide earthen pans, fix inches deep, with holes at bottom to discharge the wet, fuch as are used by the setting-gardeners about London, who raife nually for the supply of the markets; fill the pots or pans with light rich the rooting of cuttings,

mould, in which plant the flips or cuttings, many in each pot or pan, if required, putting them in within an inch of their tops, and about an inch or two afunder; give directly fome water to fettle the earth closely about each plant; then either plunge the pots, &c. in a shallow garden-frame, and put on the glaffes, or under oiled paper-frames, or cover each pot or pan close with a low hand-glass, which is rather the most eligible for facilitating their rooting; in either method, however, observe to plunge the pots in the earth, and keep them close covered with the glasses, &c. where practicable, to exclude the air, for this will promote the quick emission of roots the fame feafon; remembering to afford them occasional shade from the midday fun, but if under oiled paper none is wanted; and give plenty of water three or four times a week at least, or oftener in very hot weather; thus they will be rooted in a month or fix weeks, which will appear by their exhibiting figns of growth at top; at which period inure them gradually to the full air, fill supplying them duly with water during the hot weather, whereby they will thoot in height; and those planted early will often branch out laterally a little the fame year, fo as to commence pretty little plants by autumn : let them remain in the full air until October, then remove them in their pots or pans into the green-house, or under a good garden-frame for the winter, and in fpring the forwardest in growth may be potted off separately in small pots; but if rather small and weak, or but indifferently rooted, let them have another fummer's growth, and pot them out separately in September or fpring following, as it shall feem proper; managing them as other green-house shrubs of similar temperature, and shift them into larger pots annually, or according as they shall require,

For want of frames and glasses of any fort to ftrike the cuttings under, oiled paper-frames may be used, which may be obtained at an easy expence, and are excellent for striking many forts of cuttings; they admit the rays of light and heat sufficiently, & at the fame time afford such agreeable shade, prodigious quantities of Myrtle and that no other is required, and which is of fuch a nature as greatly to promote

But Myrtle cuttings will fometimes firike in the open ground without any coverings; and if planted betimes in fummer, either in pots or pans, as above mentioned, and plunged in a the dearth of fuch a border of rich earth; and in either method plentifully fupplied with moisture, they will often root tolerably the same year, and shoot a little at top; though rarely make so good plants by autumn as those forwarded in the above manner, nor near so strong as those struck in the following method by artificial heat.

the following method by artificial heat. By Aid of Hot-beds, either that of dong, under frames and glasses, oiled paper-frames, or in the bark bed in the stove, &c. but rather the latter; but by either method the rooting and first growth of the slips may be greatly forwarded; a bark-bed in particular in the stove, &c. is the most eligible, and effectual for this purpose, and in which wast numbers of slips or cuttings may be readily ftruck, at any time from March until August, both in moots of the former year, and of the fame year's growth, from three or four to five or fix inches long : and that those firuck in spring and early in fummer, will form fine young plants for potting off early in the succeeding autumn. However, in default of bark hot-beds, one of dung under glasses may fuffice; but if furnished with both, give preference confiderably to a bark-bed.

Therefore being furnished with pots, or rather wide pans, as before directed, filled with fine rich earth, take off a quantity of flips or cuttings, the most robust shoots; which if in spring or early in fummer, those of the former year must be chosen; and at a more advanced feason, those of the same year will be arrived to a proper growth for this purpose: observing for either fort to strip off the under leaves, as before advised; then plant them in the pots or pans, as already exhibited, give a general watering, and directly plunge them in the hot-bed, affording occasional flight shade from the fierce fun, and water them frequently; they will thus root in a fortnight or three weeks, and advance in growth; obferving to inure them gradually to the open air, if the temperature of the weather permits, in a meltered fituation; or in a frame, if cold weather; and from thence by degrees expose them sully for the remainder of the summer, in a sheltered place, and supply them duly with water in dry weather. They will be sine plants by September; and, as before observed, those raised early will be then fit to pot off singly into small pots; and the latter plantings will be fit for potting in spring, or autumn following; removing them all to shelter towards the middle or latter end of October.

In striking the cuttings by the above method, if, as foon as they are planted and plunged in the hot-bed, each pot or pan is covered close with a low hand-glafs, it will still contribute to facilitate their rooting the more effectually; for being close covered, it will force out roots sooner, and prevent the cuttings from running up weak; obferving, however, when they begin to advance at top, to remove the glasses.

advance at top, to remove the glaffes.

By the above methods of artificial heat, in firking Myrtle cuttings, you may make two or three plantings each feafon, where large quantities are required; the first planting in March or April, of the best last year's shoots; the second early in June, of the succeeding best shoots; or about Midfummer, or foon after, may plant shoots of the year; and in a month or fix weeks after, the next best shoots alfo of the fame year will be come forward, and of which may be made another plantation; plunging each planting in the bark-bed, &c. as above; thus may you have three young crops advancing in different stages of growth each year in store-pans; some ready for potting off fingly every autumn and fpring, whereby a large stock may be always kept up, as is necessary for those who raise them for fale, especially about London, for Covent-garden market, where amazing quantities are brought for fale at all times of the year, which fell from fix-pence to half-a-crown per pot, according to the fize and goodness of the plants.

Those who propagate large quantities of these plants annually, should always keep some strong bushy plants for furnishing slips or cuttings for this purpose.

Propagation by Layers,——Such plants as are furnished with young bottom branches or shoots fituated low enough for laying, may be layed in fpring, in the usual way; every shoot will readily emit roots, and be fit to transplant into separate pots in

By Seed.—These may be sowed in spring, in pots of light mould, plunged in a moderate hot-bed; they will soon come up, and, when two or three inches high, pot them off separately in small pots; manage them as the others, and probably as they advance in growth may discover some new varieties.

With respect to the general culture of all these forts of common Myrtle, they succeed in the open air from May until the end of October, when remove them in their pots to the green-house, or into a deep garden-frame under glasses, allowing air freely in all mild weather, by opening the glasses wide; giving water once or twice a week or ten days in winter, and every other day at least in summer; and according as they advance in growth, shift them into larger pots, as may be necessary every year to one or other of them.

In training these shrubs, observe, as they naturally branch out all around, so to be seathered quite to the bottom, in a beautiful manner, that if you design any shall form standards, with bushy heads for variety, trim off the lower shoots gradually so as to form a straight clean stem, two or three seet high or more, then suffer them to branch out every way at top to form a head: but those which are intended to be low and branchy quite to the bottom, should have the lateral shoots encouraged nearly in their own way, whereby they will be feathered all the way from bottom to top, and assume a more picturesque appearance.

Let them afterwards for the most part assume their own natural growth, except when their heads become thin, straggling, and irregular; then shorten with a knife such shoots as shall appear proper, either in order to force out laterals to make good desiciencies, or

to form regularity.

Never practife clipping these shrubs with garden-shears into globes, pyramids, &c. as sometimes done; but let all necessary frimming be performed be the knise, and that only in cases of irregularity as above, for they always appear the most agreeable when they grow nearly according to nature.

If their heads at any time become very irregular, or thin and stubby, by heading down all the branches pretty short in spring, and shifting them into larger pots of fresh mould, with the ball of earth about their roots, affording plenty of water all summer, they will all branch out again numerously, and form handsome sull heads by the succeeding autumn.

Sometimes when Myrtles are become very weak straggling shooters, with naked unsightly heads, if headed down, as above, in April or May, turned out of the pots, and plunged in a warm border of rich soil, giving plenty of water, they, by sending their fibres into the fresh earth, often break out with fresh vigour, and become sine full-headed plants by the end of summer, when they may be taken up with balls and potted in fresh earth.

As the forts in general encrease in fize, shift them into larger pots.

The four kinds of Myrtle for the

The four kinds of Myrtle for the flove, are commonly propagated by feeds; though, when any are pretty branchy, it may also be tried by layers and cuttings.

By Seed,—This is procured from abroad by the dealers, preserved in sand, &c. and arrives in spring, which sow as soon after it arrives as possible, in pots of fresh rich mould, and plunge them in a bark-bed, they will come up the same season; and, when of two or three inches height, plant out in separate small pots, plunge them also in the bark-bed, supply them with water, and manage them as other woody plants of similar temperament.

By Layers,—The first fort in particular often branch out low: lay some of the young shoots in spring, by slit-laying or wireing, &c. plunging the pots in which they are layed in the tan; they will probably be rooted in one year, though it is frequently two before they strike good root, when pot them off separately.

By Cuttings.—In May or June, cut off some short young shoots from such of the plants as afford them, plant them in pots of fresh compost, plunge them in the bark-bed, and cover them close with a low hand-glass, giving due refreshments of water; they will soon take good root, the same year, and be sit to plant in separate small poss.

In the general management of these forts, keep them always in the stove, except about a month in the heat of summer, when they may be trusted abroad. Let them shoot nearly in their own way, keeping them, however, to upright stems, and suffer their hands to branch out according to nature, except just reducing very irregular shoots: give frequent waterings in common with other woody plants of the stove department, and shift them occasionally into larger pots.

of the flove department, and shift them occasionally into larger pots.

Dutch MYRTLE, [Myrica.] Candleberry Myrtle. This plant grows in the bogs in many parts of England.

See Candleberry Tree.

MUM. A kind of liquor much

MUM. A kind of liquor much used in Germany; thus made. Take fixty-three gallons of water that hath been boiled to the consumption of a third!part, brew it according to art with seven bushels of wheat malt, one bushel of oat meal, and one bushel of ground beans; when it is tunned, let not the hogshead be too full at first; and when it begins to work, put into it, of the inner rind of fir three pounds, tops of fir and birch one pound, cardu-

us benedictus three handfuls, flowers of rota folis a handful or two, burnet, betony, marjoram, avens, penny-rotal, wild-thyme, of each a handful and a half, of elder-flowers two handfuls or more, feeds of cardamom bruifed three ounces, barberries bruifed one ounce: put the herbs and feeds into the veffel when the liquor hath wrought a while; and after they are added, let the liquor work over the veffel as little as may be; fill it up at lait, and when it is ftopped, put into the hoghead ten new-laid eggs, unbroken or crack'd, ftop it up close, and drink it at two years end.

But our English brewers use cardamom, ginger, and sassarias, which serves instead of the inner rind of fir, also walnut rinds, madder, red sanders, and enula campana; and some make it of strong-beer, and sprucebeer: and where it is designed mostly for its physical virtues, some add water-cress, brooklime, and wild-parsy, with fix handfuls of horse-radish rasped to every hogshead, according to what their inclinations and fancy most lead them,



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NAIL. A kind of horny excref-cence, upon the ends of the fingers or toes; also a well-known spike of metal with a fharp point, and a flat head, used to fasten things together.

NAIL. In measure, the fixteenth

part of a yard.

NARD, [Nardus.] There are two forts of this plant, the Celtic and the Indian: the Celtic is a root confifting of a number of fibres, with the lower part of the stalks adhering; these last are covered with thin yellowish scales, the remains of the withered leaves. The Indian nard or fpikenard, is brought from the East-Indies,

This is a congeries of small fibres iffuing from one head, and matted close together, fo as to form a bunch about the fize of the finger, with some small ftrings at the opposite end of the head. The matted fibres (which are the part chosen for medicinal purposes) are supposed by some to be the head or spike of the plant, by others the root: they feem rather to be the remains of the withered stalks, or the ribs of the leaves; fometimes entire leaves and pieces of stalks are found among them; we likewise now and then meet with a number of these bunches issuing from one root.

Both the nards have a warm, pungent, bitterish taste; and a strong, not evry agreeable smell. They are stomachic and carminative; and faid to be alexipharmac, diuretic, and emmena-gogue: their only use at present is as ingredients in the mithridate and theriaca.

NASTURTIUM, [Lepidium.] Dittander.

NASTURTII Aquatici. Watercreffes. This plant grows wild in rivulets, and the clearer standing waters; its leaves remain green all

the year, but are in greatest per-fection in the spring. They have a quick pungent smell (when rubbed betwixt the fingers) and an acrid tafte. As to their virtues, they are among the milder aperient antiscorbutics. Hoffman has a mighty opinion of this plant, and recommends it as of fingular efficacy for accelerating the circulation, strengthening the viscera, opening obstructions of the glands, promoting the fluid fecretions, and purifying the blood and humours; for these purposes, the expressed juice, which contains the peculiar tafte and pungency of the herb, may be taken in doses of an ounce or two, and continued for a confiderable time. The juice is an ingredient in the fucci fcorbutici of the fhops.

NASTURTII Hortenfis. Garden-creffes. The leaves of garden creffes make an ufeful fallad in fcorbutic habits: in taste and medical virtues, they are fimilar to the foregoing, but much weaker. The feeds also are considerably more pungent than the leaves.

NAVE, of a Wheel, is that short thick piece in the center of the wheel, which receives the end of the axletree, and in which the ends of the spokes are fixed: it is bound at each end with hoops of iron, called the nave-bands. It has likewise, in each end of the hole, through which the end of the axletree goes, a ring of iron, called the wisher, which saves the hole of the

nave from wearing too big. NAVEL GALL, The Navel-gall is feated on the top of the spine, opposite to the navel, from whence it has its name, and is generally caused by a bad faddle pinching a horse behind, which, being neglected, turns to a foul fungous excrescence; and sometimes, after long continuance, to a finuous

finuous and fiftulous ulcer, fometimes It looks like a harden'd brown jelly, and fometimes black and mortifyed, While there is moisture and sensibility in the part, an ointment may be applied of quickfilver and turpentine, viz. an ounce of quickfilver to every two ounces of the turpentine, rubbed in a mortar till they be well incorporated, and then spread upon hurds or flax : on each fide of the spine, over the fwelling, may be laid fmooth dry pledgits of hurds, or bolfters of flaxen eloth, which may be girt round with a furfingle. But if the fore be dead and lifeless, a good sharp razor or knife may be made use of to cut it to the quick, and then let it be dress'd according to the directions laid down in

the cure of wounds, &c.

NAVELWORT, [Cotyledon.] This
plant grows upon old walls, buildings, and rocky places, in many parts of England; it is a biennial plant. There are feveral other species brought from different parts of the world, and cultivated in the gardens, some of which require the affistance of a stove.

Shrubby African NAVELWORT, [Craffula.] There are feveral species of this plant, which may be managed like the Sicoides.

Venus's NAVEL WORT, [Cynoglossum.]
This is an annual plant, with long narrow greyish leaves, and white flowers, which grow in loose panicles. It is propagated by feeds fown in autumn,

Water NAVELWORT, [Hydrocotyle.] This plant grows plentifully in moift

places in most parts of England.

NAVEW, [Rapa.] This is a fort of turnep, fown in fome of our gardens for culinary use: the roots are warmer than the common turnep. The feeds have a bitterish taste. accompanied with a faint aromatic flavour : abundance of virtues have been ascribed to them, as attenuating, detergent, alexipharmac, and others; at prefent, they are of no farther use in medicine, than as an ingredient in the theriaca.

NEAT. Cattle of the cow kind.

NEAT-HERD. A cattle-keeper, NECTARINE. Properly fo called of nectar the poetical drink of the Gods. This fruit differs from peaches in nothing more than having a fmooth rind, and the flesh being firmer; it should

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have come under the article peaches, but that the writers in gardening have distinguished this fruit by the name of nectarine, and we shall follow their example, left by endeavouring to rectify their mistakes, we should not be understood to the reader. Mr. Miller mentions the following varieties of this

1. Fairchild's early nectarine. is one of the earliest ripe Nectarines we have; it is a fmall round fruit, about the fize of the Nutmeg Peach, of a beautiful red colour, and well flavoured; it ripens the end of July, or the beginning of August.

2. Elruge Nectarine. The tree has fawed leaves; the flowers are small; it is a middle-fized fruit, of a dark red or purple colour next the fun, but of a pale yellow or greenish colour towards the wall; it parts from the stone, and has a foft melting juice;

this ripens in the middle of August.
3. Newington Nectarine. The t has fawed leaves; the flowers are large and open; it is a fair large fruit (when planted on a good foil,) of a beautiful red colour next the fun, but of a bright yellow towards the wall; it has an excellent rich juice; the pulp adheres closely to the stone, where it is of a deep red colour: this ripens the latter end of August, and is the best flavoured of all the forts.

4. Scarlet Nectarine is fomewhat less than the last, of a fine red or scarlet colour next the fun, but loses itself in paler red towards the wall: this ripens in the end of August.

5. Brugnon or Italian Nectarine has fmooth leaves; the flowers are small; it is a fair large fruit, of a deep red colour next the fun, but of a foft yellow towards the wall; the pulp is firm, of a rich flavour, and closely adheres to the stone, where it is very red: this ripens in the end of August.

6. Roman Red Nectarine has Imooth leaves and large flowers; it is a large fair fruit, of a deep red or purple colour towards the fun, but has a yellowish cast next the wall; the flesh is firm, of an 'excellent flavour, closely adhering to the stone, where it is very red: this ripens in the end of August.

7. Murry Nectarine is a middle-fized fruit, of a dirty red colour on the fide next the fun, but of a yellowish green

towards

towards the wall: the pulp is tolerably well flavoured; this ripens the begin-

ning of September.

8. Golden Nectarine is a fair handfome fruit, of a foft red colour next the fun, but of a bright yellow next the wall; the pulp is very yellow, of a rich flavour, and closely adheres to the ftone, where it is of a faint red colour ; this ripens the middle of September.

g. Temple's Nectarine is a middle-fized fruit, of a fost red colour next the fun, but of a yellowish green towards the wall; the pulp is melting, of a whire colour towards the flone, from which it parts, and has a fine poignant flavour; this ripens the end

of September,

10. Peterborough, or late green Nectarine, is a middle-fized fruit, of a pale green colour on the outfide next the fu , but of a whitish green towards the wall; the flesh is firm, and, in good seasons, well flavoured; this ripens the middle of October.

There are fome persons who pretend to have more forts than are here fet down, but we doubt whether they are different from those here mentioned, there being so near a resemblance between the fruits of this kind, that it requires a very close attention to dif-tinguish them well, especially if the trees grow in different foils and aspects, which many times alters the same fruit fo much, as hardly to be diftinguished by perfors who are very conversant with them; therefore, in order to be thoroughly acquainted with their differences, it is necessary to consider the shape and size of their leaves, the fize of their flowers, their manner of fhooting, &c. which is many times yery helpful in knowing of these fruits.

The culture of this fruit differing in nothing from that of the Peach, we refer the reader to that article, for an ample account of their planting, pru-

ning, &c. NECTARIUM. From nectar, the fabled drink of the gods; defined by Linnæus to be a part of the corolla, or appendage to the petals, appropriated for containing the honey, a species of vegetable salt under a fluid form, that pozes from the plant, and is the principal food of bees and other infects.

Notwithstanding this definition, which feems to confider the nectarium

as necessary a part of the corolla as the petals, it is certain that all flowers are not provided with this appendage; neither indeed is it effectial to fructification.

There is, befides, a manifest im-propriety in terming the neclarism a part of the corolla. Linnaus might, with equal propriety, have termed it a part or appendage of the flamina, calix, or pointal, as the appearance in question is confined to no particular part of the flower, but is as various in point of fituation, as of form. truth is, the term nectarium is exceedingly vague; and, if any determinate meaning can be affixed to it, is expressive of all the singularities which are observed in the different parts of flowers.

The tube or lower part of flowers with one petal, Linnaeus confiders as a true nectarium, because it is generally found to contain the sweet liquor formerly mentioned. This liquor Pontedera compares to that called amnios in pregnant animals, which enters the fertile or impregnated feeds; but that this is not at least its fole use, is evident from this circumstance, that the honey or liquor in question is to be found in flowers where there either are no feeds, or those, from the want of male organs, cannot be impregnated. Thus the male flowers of nettle and willow; the female flowers of sea side laurel, and black bryony; the male and female flowers of clutia, higgelarie,

and temate nowers or crutta, magazine, and butcher's broom, all abound with the honey or nectar alluded to.

Dr. Vaillant was of opinion that the nectarium was an effential part of the caralla; for which reason he distinguished the singular appearances in fennel-flower and columbine, by the same of nectals; the coloured leaves. name of petals: the coloured leaves, which are now termed the petals, he denominates the flower cup.

That the necessium, however, is frequently distinct from the petals, is evident, both from the well-known examples just mentioned, as likewife from the flowers of monks-hood, hellebore, isopyrum, fennel-flower of Crete, barrenwort, grafs of Parnaffus, chocolate-nut, cherleria, and favoagefia.

These general observations being premifed, we proceed to take a nearer and more particular view of the principal diverfities, both in form and fituation, of this striking appendage to the flower.

I. In many flowers, the nestarium is shaped like a spur or horn; and that either in flowers of one petal, as valerian, water-milfoil, (utricularia) butter-wort, and calves-fnout; or in fuch as have more than one, as larkfpur, violet, fumatory, balfam, and orchis.

2. In the following plants, the nectarium is properly a part of the cerolla, as lying within the substance of the petals: ranunculus, lilly, iris, crownimperial, water-leaf, mousetail, ananas or pine-apple, dog's-tooth violet, pi-peridge bush, wallisheria, bermannia, uvularia, and fwertia.

3. The nectarium is frequently placed in a feries or row within the petals, though entirely unconnected with their Substance. In this situation it often resembles a cup, as in narcissus. A nectarium of this kind is said by Linnæus to crown the cerolla. The following are examples: daffodil, fea daffodil, campion, vifcous campion,
fwallow-wort, flapelia, cynanchum, nepenthes, chorleria, balfam-tree, African
floreas, witch hazel, olax, and paffionflower.

4. In Indian creis, buckler mustard, Barbadoes cherry, and monotropa, the neclarium is fituated upon, or makes

part of the calix.

5. The nefferium in bastard flower-fence is seated upon the anthera or tops of the stamina; whence the name adenanthera, orglandular anthera, which has been given to this genus of plants. In the following lift it is placed upon the filaments: bean caper, hay, fraxinella, maryel of Peru, bell-flower,

lead-wort, roella, and commelina.

6. In hyacinth, flowering ruth, flock July-flower, and rocket, the nestarium is placed upon the feed-bud.

7. In honey-flower, orpine, buck-

wheat, collinsonia, lathrea, navel-wort, mercury, clutia, higgslaria, sea-side laurel, and African spirata, it is at-tached to the common receptacle.

Laftly, in ginger, nottle dyer's weed, heart-feed, surmerick, gregois, bastard orpine, vanellos, skrew-tree, and willow, the nectarium is of a very fingular construction, and cannot properly fall under any of the foregoing heads.

In discriminating the genera, nettarium often furnishes an effential character.

Plants which have the nectarium distinct from the petals, that is, not lodged within their fubitance, are affirmed by Linneus to be generally poisonous. The following are adduced as examples : monk's hood, hellebore, columbine, fennel-flowers, grafs of Parnaffus, barren-wort, oleander, marvel of Peru, bean caper, succulent swallow wort, fraxinella, and honeyflower.

The term nectarium, by which this part of the flower has been diftinguished, is the invention of Linnaus, who pretends even to have first recognized the part in question. It is certain, however, that Tournefort, in 1694, observed it in the passion-flower, swallow-wort, and some other plants; and that Vaillant, in 1718, regarded it as a part depending upon the petals, which did not merit any particular appellation. NEEZEWORT. Speezewort.

NENUPHAR. Water lily. NEP. Carmint, This plant is commomly cultivated in our gardens, and is fometimes also found growing wild in hedges and on dry banks. It is a moderately aromatic plant, of a firong fmell, not ill refembling a mixture of mint and pennyroyal; of the virtues of which it likewife participates. NEPHRITIC WOOD, [Lignum

nephriticum.] An American wood, brought to us in large compact, ponderous pieces, without knots, of a whitish or pale yellow colour on the outfide, and dark-coloured or reddift within: the bark is usually rejected. This wood imparts to water or redified spirit a deep tincture, appearing, when placed betwixt the eye and the light, of a golden colour, in other fituations blue: pieces of another wood are fometimes mixed with it, which give only a yellow colour to water. The aephritic wood has scarce any smell, and very little tafte. It stands recommended in difficulty of urine, nephritic complaints, and all diforders of the kidneys and urinary passages; and is faid to have this peculiar advantage, that it does not, like the warmer diuretics, heat or offend the parts. Practitioners however have not found

these virtues warranted by experience. NETTLE, [Urtica.] This is a very common plant well known. There

are feveral species brought from different countries cultivated in the gardens; they are easily propagated by feeds or parting the roots.

Dead NETTLE. See ARCHANGEL. Hedge NETTLE. See HEDGE NETTLE.

NETTLE Tree, [Celtis.] The lote

NEWING. Yeaft or barm. NICKING. The operation of nicking a horse, in the manner it is commonly performed by our grooms and farriers, is one of the most cruel and abfurd (not to fay in many cafes dangerous) that ever was invented or practifed; though, in itfelf, it is neither fevere or dangerous, and, if properly done, the horse in three or four days will be fit again for his accustomed labour. A fafe, eafy, and rational method of nicking cannot then fail of proving univerfally ufeful and acceptable, to all who are lovers of this fo noble and serviceable an animal.

In order to understand the rationale of nicking, it may be necessary to premise, that there are, in very limb, both in the human and brute species, two different fets of muscles, called, the flexors & extensors, whose actions are diametrically opposite to each other, as the flexors, in their actions, will always ferve to bend the limb, and the extensors to straiten or extend it.-Of thefe, the flexors are by much the ftrongest, and will always keep the limb in a half-bent state, unless, by any effort of the will, the weaker extenfors should be brought into action, and overcome the natural contraction of the bending muscles. The arm of a man, when asleep, or in a state of rest, is always half bent, and the fingers half closed, but he can at any time, at pleafure, extend it, and bring it strait; but this state of extension may be called, a state of violence; as it cannot, for any length of time, be continued without fatigue and pain, owing to the superior strength, and actions, of the flexor muscles.

Let the same method of reasoning be applied to the effect of the operation of nicking on the tail of the horse; and it will readily appear, why it

the fame time, will point out to us what are the best, the easiest, and the fafest methods of performing the opera-

The tail of a horse is naturally drawn downwards by the actions of the flexor muscles, and the horse has it in his power to raise or elevate his tail when he voids his excrements or the like; yet this may be confidered as a state of violence, and is but of short duration, -But weaken or destroy the action of the muscles, which draw it downwards, and the extending, or elevating muscles, having nothing to counteract or refift them, will exert their own particular action, and draw and pull up the tail.

In the methods at prefent used in nicking, we may fee an instance of the barbarity, and favage cruelty of the farriers and grooms; f er, as they never trouble themselves to enquire into the rationale of the operation, they in general act as if they believed that the deeper they cut, and the more they punished the horse by pulling and the like, the more likely will he be to carry a good tail; hence they often cut into the very joint itself, and put the horse to such torture, that severs, and mortifications, will come on; which often end in death: whereas, when the operation is properly per-formed, it is not attended with any hazard, and but very little pain; and any gentleman may perform it upon his own horfe, without rifk or danger; as all that is required is to deftroy the action of the muscles which draw down the tail; whence necessarily the extenders, having no power to counter-act them, will elevate and lift it up.

When the tail is raised, the two flexor muscles may be seen and felt, near or upon the edges of the under part of the tail, from the base to its extremity: an incision is to be made with a lancet or pen-knife, thro' the fkin, at the distance of about an inch or two from the base of the tail; and, the muscle will appear like a red cord, about the thickness of the little finger, which is likewife to be cut through,—Make a fecond incifion, in the same manner, at the distance of about two inches from the first, and when the muscle is cut through, the lower extremity of the divided mufcle, should raise or cock the tail; and, at will drop, so as to hang near half an

inch out of the first incision, --- Make a third, and, if necessary, a fourth in-cision, in the same manner, on each fide the tail: but it is not necessary that the skin, in the middle of the tail be divided, or, that the wounds fould communicate from fide to fide with each other: then with a pair of small pincers, lay hold of the ends of the muscle, as they hang out of the wound, and draw them as far out as may be, then with a knife, or pair of sciffars, cut off as much of them, as you can come at.—If an artery should be divided, and the wound bleed much, which will feldom or never happen, if the incisions do not extend too far towards the middle of the tail, a little lint or tow, dipped in flour and bound lightly on, will be sufficient to stop it; but, if there should not be a loss of blood, there will be no occasion for any dreffing, or application of any kind, as the wounds will, in a very few days, heal of themselves .--It is the general, and indeed univerfally received practice, to extend the horse's tail with weights and pullies, for many days after the operation, but what fervice this can be of, is hard to guess; 'tis true indeed, it is a fevere punishment to the poor animal, and may carry an appearance of firetching, and keeping open the wounds, but that it is of no real ad-vantage, is manifest from experience, as instances can be produced of horses, which have never been pulleyed, that carry as good a tail, as any of those who have gone through the whole severity of their racks and pullies: befides, as all that can with any degree of reason be attributed to the pullies is, only to keep the divided extremities of the muscle from coming together to heal and unite again, it will appear obvious to any one that will give himfelf the liberty to think, that this can never be the case, even when no pulley is used, for when the muscle of the tail is divided, the lower part of it shrinks and contracts it to a full half inch from the incifion, at the same time near half an inch being cut off from the upper part, there will be a distance of near or quite an inch, between the extremities of the divided muscle; a space far greater than is necessary to prevent a union again.

In the method above related of performing the operation, it is recom-

mended to make the first incision, at the diffance of an inch or two from the base of the tail; but this depends entirely upon the manner in which any one may chuse to have the horse carry his tail; if a very high cock-up tail should be required, the nearer the incision is made to the base of it, the likelier will this effect be to happen, and vice verfa; or if the tail should t required to turn round, up towards the back, four or five incitions may be made, otherwise three will in general be fully fufficient : - or, if the horse's tail should be required with the point dripping downwards, two incifions will be fufficient, and the first may be made at the distance of near three

inches from the fetting on of the tail.

NIGHTSHADE, [Solamum.] Mr.

Miller reckons no less than thirty-one different species of this plant, and under this head the botanists range potatoes, love-apples, egg-plant, and winter-cherry. They may be propagated by feeds or cuttings.

Deadly NIGHTSHADE, [Solamum Lethale.] This plant grows wild in flady waste grounds. This and the com-mon night shade have both been supposed cooling and discutient in external applications, and poisonous when taken internally. Late experi-ence has shewn, that an infusion of half a grain or a grain of the dried leaves of either may be taken with fafety, and that in many cases the dose may be increased by degrees to five or fix grains: that they generally occa-fion some confiderable evacuation, and fometimes, especially in the larger of the above doses, alarming nervous fymptoms, which however cease with the operation of the medicine. It has been expected, that a cautious use of these very active plants would afford relief in some obstinate disorders : but though in some instances they promised great benefit, the general event of these trials has not been very favourable. The Edinburgh college, who retained these plants at the preceding revisal of their Pharmacopteia in the year 1744, have, at the late one in 1756, rejected them both.

Enchanters NIGHTSHADE. See Ex-CHANTERS.

American NIGHTSHADE, [Solanoides.] This plant grows naturally in the West-Indies, and may be propagated by feeds, but will not bear the cold of England.

NIPPLEWORT, [Lapfana.] This is a common weed growing by the fides of foot paths and hedges.

fides of foot paths and hedges.

NITRE, [Nitrum.] A fait, extracted in Persia and the East-Indies, from certain earths that lie on the fides of hills; and artificiall, produced in some parts of Europe, from animal and vegetable matters rotted together (with the addition of lime and ashes) and exposed for a length of time to the air, without the access of which, nitre is never generated: the salt extracted from the earths, &c. by means of water, is purished by colature and crystallization.

Pure nitre diffolves in about fix times its weight of water, and concretes againin to colourless transparent crystals; their figure is that of an hexagonal prism, terminated by a pyramid of an equal number of sides. It readily melts in the fire; and in contact with suel designates, with a bright shame and considerable noise; after the detonation is over, a large quantity of alkaline salt is found remaining. The taste of nitre is sharp, penetrating, and bitterish, accompanied with a certain sensation of coldness.

Nitre is a medicine of celebrated use in many diforders. Befides the aperient quality of neutral falts in general, it has a manifestly cooling one, by which it quenches thirst, and abates febrile heats and commotions of the blood: it has one great advantage above the refrigerating medicines of the acid kind, that it does not coagulate the animal juices; blood, which is coagulated by all the mineral acids, and milk, &c. by acids of every kind, are by nitre tendered more dilute, and preferved from coagulation: it nevertheless fomewhat thickens the thin, ferous, acrimonious humours, and occasions an uniform mixture of them with fuch es are more thick and viscid; by this means preventing the ill confequences which would otherwise ensue from the former, though it has not, as Juncker fuppoles, any property of really obtunding acrimony. This medicine for the most part promotes urine; fometimes gently loofens the belly; but in cold phlegmatic habits, very rarely has this effect, though given in large dofes :

alvine fluxes, proceeding from too great acrimony of the bile or inflammation of the inteftines, are suppressed by it: in choleric and sebrile disorders, it generally excites sweat; but in malignant cases, where the pulse is low, and the strength lost, it retards this salutary evacuation and the equption of

the exanthemata.

Dr. Stahl has written an express treatise upon the medical virtues of nitre; in which he informs us, from his own experience, that this falt added to gargarifms employed in inflamations of the fauces in acute levers, thickens the falival moisture upon the palate and fauces into the confistence of a mucus, which keeps them moist for a confiderable time, whereas, if nitre be not added, a fudden dryness of the mouth immediately enfues: that in nephritic complaints, the prudent use of nitre is of more service than any of the numerous medicines usually recommended in that difeafe: that nitre gives great relief in suppression and heat of urine, whether simple or occafioned by a venereal taint; that it is of great fervice in acute and inflammatory pains of the head, eyes, ears, teeth, &c. in alleryfipelatous affections, whether particular or universal, and likewise in chronic deliriums ; that in diarrhϾ happening in petechial fevers, nitre mixed with absorbents and diaphoretics, had the best effects, always putting a stop to the flux, or rendering the evacuation falutary; that in diar-rhoze happening in the fmall-pox, it had been employed with the like fuccefs, two dofes or three at most (confifting of two, three, or four grains each, according to the age, &c. of the patient) given at the interval of two or three hours, putting a stop to the flux, after the bezoardic powders, both with and without opium, had been given without fucces. The fame given without fuccefs. The fame author recommends this falt likewife as a medicine of fingular fervice in choleras attended with great anxieties and heat of the blood; in the flatulent spasmodie heart-burns familiar to bypochondrical people; and the loss of appetite, nausea, vomiling, &c. which gouty persons are sometimes seized with upon the pains of the feet, &c. fuddenly remitting. In cases of this last kind, the use of nitrefurely requires

great caution, although the author af-fures us, that no bad confequences are to be feared from it. Nevertheless he observes, that in a phthisis and ulcerous affections, it has been found to be of no fervice; and that therefore its use may be superfeded in these complaints. Indeed in disorders of the lungs in general it is commonly reckoned to be rather hurtful than beneficial.

The usual dose of this medicine among us is from two or three grains to a scruple; though it may be given with great fafety, and generally to better advantage, in larger quantities; the only inconvenience is its being apt to fit uneafy on the flomach. Some its weight of aqueous moisture by fusion, and confequently that one part of melted nitre is equivalent to two of the crystals; but it did not appear, upon several careful trials, to lose so much as one-twentieth of its weight, The officinal preparations of nitre are a decoction or folution in water and troches. A corrofive acid spirit is also extracted from it. It is employed likewife in operations on metallic bodies, for promoting their calcination, or burning out their inflammable matter. NONE-SO-PRETTY. London

pride, NONESUCH, or FLOWER OF BATATOL, Campion. NORTHERN ASPECT.

leaft favourable of any in England, as having very little benefit from the fun. even in the height of fummer, therefore can be of little use, whatever may have been advanced to the contrary : for although many forts of fruit-trees will thrive and produce fruit in such positions, yet fuch fruit can be of little worth, fines they are deprived of the kindly warmth of the fun to correct their crude juices, and render them well tasted and wholesome; therefore it is to little purpose to plant fruit-trees against such walls, except it be for fuch which are intended for baking, &c. where the fire will ripen, and

You may also plant Morello Cherries, for preferving; and white and red Currants to come late, after thofe which are exposed to the fun are gone : and if the foil be warm and dry, fome

render those juices wholesome, which,

for want of fun, could not be performed

while growing.

forts of fummer Pears will do tolerably well on fuch an exposure, and will continue longer in eating, than if they were more exposed to the fun, But you should by no means plant winter Pears in such an aspect, as hath been practifed by many ignorant perfons, fince we find that the best fouth walls, in fome bad years, are barely warm enough to ripen those fruits.

Duke Cherries planted against walls exposed to the north, will ripen much later in the feafon; and if the foil is warm, they will be well flavoured, fo that hereby this fruit may be continued a month later than is ufual,

NOSEBLEED. Milfoil. NOVEMBER. The ninth month of the year.

Work to be done this month in the Kitchen Garden.

Continue to fow Beans and Peas on a warm border, to support those sown laft month.

About the middle of this month begin to cut off the leaves of Artichokes close down to the ground, and throw the earth up in ridges about the plants, which will keep out the frost better than laying long dung over them. In very severe weather, however, they will require a covering of straw or litter.

Take up Carrots and Parinips, and other kitchen roots, this month in a dry day, for winter stores. Cut the tops off close, clean them from dirt, and deposit them in a bed of dry sand, with the crowns of the roots outwards,

over which lay a covering of dry straw. Potatoes should be laid in a dry room, and in frosty weather covered with fraw a foot thick. Examine them frequently, and take out the rotten ones, otherwise they will corrupt the whole flock,

It is a good method to gather only the outfide leaves of Spinage at this feason, for the inner ones will grow the larger against another gathering.

Prepare hot-beds to raife Afparagus, in the manner above directed for making hot-beds.

Nurfery, Fruit, and Flower Gardens. Prepare your land for new plantations in February or March,

Stake and tie new planted trees; lay mulch on their roots, and cover the beds of feedling exotic plants, in n fharp frofts, with hoops and mats,

or totally with peas-straw, &c.
Plants in pots should be plunged into the earth to the rim in a warm fituation, when they may be eafly covered.

Open the Greenhouse windows in the middle of the day, and water the plants as there shall be need.

Take care to shelter the choicest of your Tulips, Hyacinths, Ranunculus's and Anemonies, from heavy rains, tharp frosts, and fnow, which will destroy or greatly injure them; and continue to plant those and other bulbous roots as in October.

Continue to transplant Roses, Syringas, Honeyfuckles, and other hardy flowering shrubs; and prune off their irregular branches at the fame time; you may also take up their fuckers, and place them in the nurfery for increase,

Prepare the ground for receiving the sore tender plants in the fpring. Clear the gravel walks of weeds, mois, and rubbish, and roll them once a week in a dry day; which will keep them in better order than the modifi cuftom of digging them up for the winter.

Trees and Shrubs in flowers Honeyfuckles, laurustinus, mezereon, passion flower, pyracantha in fruit, roses, strawberry-tree in fruit and flower.

Flowers.

Anemonies, afters, Chinese afters, colchicums, cyclamens, daifies, golden-rods, pansies, polyanthuses, primroses, starworts, stocks, striped lilies in leaf, funflowers, wallflowers.

NOURISHMENT of Plants.

NURSERY. A most useful district of gardening, appropriated for the raising and nursing all forts of trees, fhrubs, and herbaceous plants, to a proper growth, for supplying and recruiting the different gardens, orchards, plantations, &c.

In the Nursery-garden are raised all the different forts of fruit-trees, and fructiferous shrubs, by the methods directed for each fort under their proper genera, nurfing and training them up to a proper fize & growth for planting in the garden or orchard, where they are finally to remain to produce their fruit.

Likewise in the Nurfery is raised the

vast train of forest-trees, hardy ornamental trees, and shrobs in general both deciduous and ever-greens of all those kinds, and training them up to a proper fize for the purpofes for which they are defigned in the plantations and pleafure ground.

And in the Nurfery may also be raised all the forts of hardy herbaceous plants, both fibrous rooted, bulbous, and tuberous-rooted kinds, for adorn ing the pleasure-garden, medical ufe, &c.

All forts of the above kinds may be readily raised together in the same Nursery in separate compartments.

A Nurfery thus furnished with the different forts of all kinds of trees shrubs, and herbaceous plants, will prove an inexhauftible fource of accommodation both for private and public ufe.

The raifing or propagation of the numerous kinds is performed by va-rious methods, as by feed, fuckers, layers, cuttings, flips, off-fets, parting the roots, grafting, budding; each of which methods as directed under their proper heads; and after being raifed by either of the above methods, & stationed in Nursery-rows, they are to remain until they have acquired a proper growth for their respective uses, then to be transplanted into the garden, orchard, plantation, &c. where they are defigned finally to remain, to effect the feveral purpofes for which they are calculated, either for use, ornament, or variety; observing, that as a recruit of some or other of the various forts will be required to be drawn off every year, to supply the different gardens and plantations, a fresh supply of young plants should also be raifed accordingly every year in the Nursery, of most of the various kinds, fo as to have this diffrict always fully flocked with all kinds in feveral different degrees of growth; some in feed-beds, others transplanted in Nurfery-rows; fome one year, others two, three, or feveral years: all of which should be well attended to, both in private and public Nurferies, that there may be a fufficiency of plants of all. forts for furnishing every different department of gardening as they shall be occasionally wanted.

In the public Nurfery gardens they have also convenient green-houses, glass-cases, and stoves, with their proper appendages, for raising the tender exotics from the warmer parts of the world; there departments are always flationed in the warmest and most funny fituation, having their front directly facing the fouth, to have all possible benefit from the fun's influence; and each principal department having its different appendages as aforefaid, which are smaller departments of framework, sashed and glazed, either ad-joining to the main ones, or detached : ferving as seminaries or nurseries for taifing and nurfing the various tender plants to a proper growth for furnish-

ing the other larger confervatories.

Thus a Nurfery ground, furnishing plants of different temperatures, will prove very valuable, and its various growths will afford the most agreeable fource of variety at all feafons, which to many will appear as ornamental and defireable as the most elegant pleasure-

ground or flower garden.

With respect to the proper extent or dimensions of a Nursery, whether for private use, or for public supply, it must be according to the quantity of plants required, or the demand for fale; if for private use, from a quarter or half an acre to five or fix may be proper, which must be regulated according to the extent of garden-ground and plantations it is required to supply with the various forts of plants; and if for a public Nurfery, not less than three or four acres of land will be worth occupying as such, and from that to fifteen or twenty acres, or more, may be requifite, according to the demand, though fome occupy forty or fifty acres in Nurfery-ground.

In the neighbourhood of London, for eight or ten miles round, there are a treat number of extensive public Nurferies, most beautifully furnished with a prodigious variety of all forts of trees, fhrubs, and herbaceous plants, of different degrees of growth, for supplying noblemen and gentlemen's gardens and plantations, for fome hundreds of miles diffant at home and abroad; as allo all forts of feeds. Most of which Nurferies are also furnished with all proper green-houses, glass-cases, stoves, &c. for the raifing all kinds of curious tender exotics for public supply.

Vol. II.

With regard to foil for a Nurfery the nature and quality of this; without all dispute, requires our particular attention. The Nursery-men generally prefer a loamy foil of a moderately-light temperament, if possible, such as in most of the Nursery grounds around London : however, a Nurfery may be of any far moderately light land, that is fifteen or eighteen inches depth of good working staple, but if two or three spades deep it will be the greater advantage; and where there is fcope of ground to chuse from, always prefer that where there is a good depth and naturally rich or fat foil, for the foil of a Nurfery cannot be too good; notwithstanding what some advance to the contrary; for if foil prove poor and lean, the plants raised thereon will be languid, weak; and funty; and no remedy, how artful foever, will be able to rectify their conflictution; especially all the tree-kinds : whereas those raised in a good fat foil always affume a free growth; and advance with strength and vigour, It is not absolutely requifite, however, that the foil should be exceedingly rich, nor over carefully manured, a medium between the two extremes is best. good fresh fat foil, such as any good pasture, which having the swand trenched to the bottom, is excellent for the growth of trees; any good fat foil of corn-fields is also extremely proper; or any other good foil of the nature of common garden earth 12 also very well adapted for a Nursery.

As to fituation; if this be rather fomewhat low it will be the better; because it is naturally warmer, an more out of the power of cutting and boifterous winds than a higher fitustion; though if it happens where forme parts of the ground is high and forme low, it may be an advantage, the better to fuit the nature of the different plants. It is also of fingular advantage to have a Nursery ground full exposed to the fun and tree air; and, if possible, where there is the convenience of having water for the occasional watering of feedlings, and fome newly

transplanted plants

And as to a Nurfery for private ofe, with regard to its place of fituation; respecting the other garden districts; that, where there is toom, it may the

be entirely detached, or may be fomewhat contiguous to the outer boundaries of the shrubbery plantations of the pleasure-ground, and so contrived as to lead insensibly into it by winding walks, so as to appear part of the

A fence round the whole ground is necessary: this may either be a hedge and ditch, or a paling; the former is the cheapest, and in the end the most durable; though in some places where hares and rabbits abound, paling sences at first are eligible, for preserving the Nurseries from the depredations of those animals, which often do great mischies to the young plants, by barking and cropping them: a good hedge-and-ditch-sence; however, may be made very effectual against the inroads of both men and brutes; and the most eligible plant for this purpose is the haw-thorn.

The ground must then be all regularly trenched one or two spades deep, according as the natural depth of soil will admit, for by no means dig deeper than the natural good soil, let it be either one, one and a half, or two spades deep.

Then, having trenched the ground, proceed to divide it by walks into quarters, and other compartments; a principal walk should lead directly through the middle of the ground, which may be from five to eight or ten feet wide, according as it shall seem proper for use or ornament, having a broad border on each side: another walk should be carried all round next the outward boundary, four or five feet wide, leaving an eight or ten-feet border next the sence all the way; then may divide the internal part by cross walks, so as to form the whole into four, fix, or eight principal divisions, which are commonly called quarters.

One or more of the divisions must be allotted for a seminary, i. e. for the reception of all forts of seeds, for raising seedling plants to furnish the other parts; therefore divide this seminary-ground into four-seet-wide beds, with foot-wide alleys at least between bed and bed: in these beds should be sowed seeds, &c. of all such trees, shrubs, and herbaceous plants, as are raised from seed; and which seeds

confist of the various forts of kernels and stones of fruit, to raise stocks for grafting and budding; seeds of forest-trees, ornamental trees, shrubs, &c. and feeds of numerous herbaceous perennials, both of the sibrous-rooted and bulbous-rooted tribe. The sowing season is both spring and autumn, according to the nature of the different forts, which is fully illustrated under their proper genera; and when the young tree and shrub seeding-plants so raised, are one or two years old, they are to be planted out in Nursery-rows into the other principal division; but many kinds of herbaceous plants require to be pricked out from the seed-beds, when but from two to three or four months old. On the other hand, most kinds of bulbous feedlings will not be fit for planting out in less than one or two years.

Another part of the Nurfery-ground should be allotted for stools of various trees and shrubs, for the propagation by layers, by which vast numbers of plants of different kinds are propagated. These stools are strong plants of trees and shrubs, planted in rows three or sour feet distant every way, and such of them as naturally rise with tall stems are, after being planted one year, to be headed down near the ground, to store out many lower shoots conveniently situated for laying.

The other principal divisions, therefore, of the Nursery-ground, is for the reception of the various forts of seed-ling-plants from the above seminary-quarters; also for all others that are raised from suckers, layers, cuttings, &c. there to be planted in rows from one to two or three seet asunder, according to their natures: observing to allow the tree and shrub-kinds treble the distance of herbaceous perennials.

Of the tree and shrub-kinds some are to be planted for stocks to graft and bud the select forts of fruit-trees upon, and other choice plants, which are usually propagated by those methods; others are trained up entirely on their own roots without budding and grafting, as in most forest and other hardy tree-kinds; as also almost all the forts of shrubs.

lot publichers

Here

Here they are to remain to have two, three, or feveral years growth, according as they shall require for the several purposes for which they are designed in their future situations in the garden, ac. which is directed in their respective cultures.

With regard to the manner of performing the various methods of propagation for raifing the numerous Nurfery-plants, it is fully exhibited under the following heads, in the course of this work: fowing feeds—layers—cuttings—fuckers—flips—off-sets—parting noots—grassing—inoculation. And the sorts that are usually propagated by either of those methods are pointed out under their several respective heads, with particular directions of the several ways each method is performed on the different kinds.

The feafon for performing the works of fowing, planting, &c. is different in different kinds, but autumn and spring are the principal seasons.

Some forts require to be fowed in autumn, others not till fpring, which is particularly explained for the various forts undr the articles them-fevles.

An d as to planting ortransplanting, the principal season is from October until March, or even until April for tender kinds, especially many of the ever-green tribe; but all hardy trees and shrubs may be transplanted any time in winter, in open mild weather from October until March, as just observed; and for the tender kinds of ever-greens, &c. early in autumn, or not till settled weather in spring, is the proper time to remove these sorts.

But as to hardy herbaceous fibrousrooted plants, they may be tranplanted almost any time in autumn or
spring; even many sorts in summer,
when planting them out from the
seminary: observing, however, autumn
and spring are the proper planting-seasons for older or larger plants; and
which are also the only proper seasons
for dividing or slipping the roots of all
these kinds of plants for increase.

As for bulbous-rooted kinds, & all fuch tuberous roots whose leaves decay in summer, the proper season for planting or transplanting them is from May or June until the beginning of August,

when their flower-stalks decay, which in some sorts happens early and some late in the summer; but as soon as it happens in the different sorts, is the only proper time to remove all those kinds of plants when necessary, as also to separate their off-sets for increase; and which may either be planted again directly, or kept out of ground one, two, or several months, though it is proper to plant the principal part again in autumn, unless where any is to be retained for sale.

Succulent perennials may be tranfplanted almost any time from March or April until August or September, which is the best season for removing these kinds; and most kinds of succulent cuttings succeed best when planted in summer.

In the distribution of all the various forts of plants in the Nursery, let each fort be separate: the fruit-trees should generally occupy spaces by themselves; the forest-trees, &c. should also be stationed together; all the shrub-kind should also be ranged in separate com-partments; allot also a place for herbaceous perennials; a warm place should likewife be allotted for the tender kinds, and inclosed with yew hedges, or a reed hedge, &c. in which com partments you may station all such plants that are a little tender whilst young, and require occasional shelter from frost, yet are not so tender as to require to be housed like green-house plants, &c. fo that in such compartments there may also be frames of various fizes, either to be covered ocy caffonally with glass-lights, or with matts, to contain such of the choicer of the above tender kinds in pots, to be nurfed up a year or two, or longer, with occasional shelter, till hardened

gradually to bear the open air fully.

The arrangement of all the forts in the open grounds, must always be in lines or Nursery-Rows, to stand till it arrives at a proper growth for drawing off for the garden and plantations; placing the fruittree stocks, &c. for grafting and budding upon, in rows two seet assumed, if for dwarfs; but standards two seet and a half, and a foot and half in the lines; though after being grafted and budded, they then

commencing fruit-trees, &c. that if they are to stand to grow to any large size, they should be allowed the width of a yard between the rows. Forest-trees should also be placed in rows from two or three seet asunder, and half shat distance in the rows; varying the distance both ways according to the time they are to stand; the shrub kind should likewise be arranged in rows about two seet asunder, and sifteen or eighteen inches distant in each line; and as to herbaceous plants, they should generally be disposed in sour-feet wide beds, in rows from six to twelve or eighteen inches asunder, according to their nature of growth, and time they are to stand.

By the above arrangement of the various forts of hardy trees, thrubs, and herbaceous plants, in rows at those small distances in the Nursery, a prodigious number of plants are contained within a narrow compals, which is sufficient room, as they are only to remain a flort time; and that by being thus stationed in a little compals, they are more readily kept under a proper regulation for the time they are to re-

main in this department.

But in the public Nurferies they often plant many kinds of feedling-trees and thrubs in much closer rows at first planting out; than the distances above prescribed, not only in order to husband the ground to the best advantage, but by standing closer, it encourages the stem to shoot more directly upward, and presents their expanding themselves much any where but at top, as for instance, many forts of evergreens that are but of slow growth the first year or two, such as the pineties, firs, and several others; which the Nursery-gardeners often prick out from the seminary, first into four-feeting beds, in rows, length-ways, six inches asynder; and after having one or two years growth here, transplant them in rows a soot assumer; and in a year or two after give them another and final transplantation in the Nursery, in rows two or three seet as under, as observed above; and by these different transplantings, it will encourage the roots to branch out into many horizontal sibres, and prepare them better for final transplantation, which

is the more particularly necessary in feveral of the pine and fir kinds, and feveral other ever-greens, as is more fully exhibited under their proper genera.

With respect to the different methods of planting the various forts of Nurfery-plants, after being raised either by feed, layers, cuttings, &c. it is performed in several ways to different forts; some are pricked out by dibble, others are put in by the spade, either by trenches, flitting in, trenching, or boling; and some are drilled in by a spade or hoe.

As to most of the tree and shrubkind, fometimes the young feedlingtrees and shrubs are pricked out from the feminary by dibble; fometimes they are put in by the spade in the sol-lowing methods: first, having set a line to plant by, ftrike the spade into the ground with its back close to the line, and give another stroke at right angles with it; then fet a plant into the crevice made at the fecond froke, bring it close up into the first made crevice even with the line, and prefs then proceed to plant another in the fame way, and so proceed till all is planted, A fecond method is for plants with rather larger roots: firike the spade down with its back close to the line, as aforefaid, and then with a fpade cut out a narrow trench, close. along the line, as practifed in planting box edgings, making the fide next the line perfectly upright; then placing the plants upright against the back of the trench close to the line, at the proper distances, before mentioned; and as you go on, trim in the earth upon their roots; and when one row is thus planted, tread the earth gently all along close to the plants; and then proceed to plant another row. A fecond method of planting-out small thee and firmb plants is, having fet the line as above, then turning the fpade edgeways to the line, castout the earth of that spit, then a person being ready with plants, set one in the cavity close to the line, and directly taking another fuch spit, turn the earth in upon the roots of the plant, and then pla-cing another plant into the fecond cut, cover its roots with the earth of a third

fpit, and so on to the end t but sometimes, when the roots are any thing larger, holes are made along by the line wide enough to receive the roots freely every way; so covering them in, as above, as you go on: observing always to press the earth gently with the foot close to the roots, and close about the stems, to settle the plants firmly in their proper position.

in their proper position.

Herbaceous sibrous-rooted plants are, for the most part, planted with a dibble, except when the roots are larger and spreading, or such as are removed with balls of earth; then they are more commonly planted by holeing them in with a garden trowel,

or fmall fpade.

Bulbous and tuberous-rooted plants, fuch as lilies, tulips, anemonies, ranunculas, &c. are very commonly planted with a dibble, but many forts may also be drilled in with a hoe. These forts are also sometimes planted as sollows: rake or trim the earth from off the top of the beds from about three to four or five inches deep, into the alleys, then place the roots in rows upon the surface, and immediately cover them with the earth which was drawn off into the alleys for that purpose, spreading it evenly over every part, so as to bury all the roots an equal depth.

But as to the tender kinds of exoticplants they require occasional shelter whilst young, many of them should be potted, in order for moving to a warm situation in winter, or some into frames, &c. to have occasional shelter from frost, by glasses or mats, as they shall require; hardening them, however, by degrees, to bear the open air fully in the Nursery they ear round.

air fully in the Nursery they ear round.

And the most tender kinds, that require the aid of a green-house and flove, must all be potted, and placed among the respective plants of those

confervatories.

With respect to the management of the various hardy Nursery-plants;

Those designed as stocks for fruittrees should have their stems generally cleared from lateral shoots, so as to form a clean straight stem, but never to shorten the leading shoot, unless it be decayed, or become very grooked, in which case it may be pro-

per to cut it down low in fpring, and it will shoot out again; training the main shoot for a stem, with its top entire for the present, till grafted or budded; and as to the grasting and budding them, that work is sull directed under these articles, and their general method of training, whether fordwards or standards, is also particularly exhibited under those two heads, and in the respective genera of the various forts.

Forest-trees should also be encouraged to form straight clean stems, by occasional trimming off the largest lateral branches, which will also promote the leading top-shoot in aspiring farther in height; always suffering that part of each tree to shoot at full length, that is not to top it, unless, however, where the stem divides into sorks, to trim off the weakest, and leave the straightest and strongest shoot or branch, to shoot out at its proper length to

form the top, as above.

The different forts of thrubs may either be suffered to branch out in their own natural way, except just regulating very irregular growths; or some may be trained with single clean stems, from about a foot to two or three high, according as you shall think proper with respect to the forts or purposes for which you design them in the shrubbery; but many shrubs appear the most agreeable when permitted to shoot out laterally all the way, so as be branchy or feathered to the bottom.

All the fruit-trees, as foon as grafted or budded, should have all their different varieties numbered by placing large stat-sided slicks at the ends of the rows, for which purpose many of the London Nursery-men use the spokes of old coach-wheels, or any thing about that size of any durable wood, painting or marking the numbers thereon, 1, 2, 3, &c. to different slicks, entering the numbers in the Nursery-hook, with the name of the varieties to which the number-slicks are placed; whereby you can always readily have recourse to the forts wanted.

The same method may be practifed to any other trees, shrubs, or herbaccous plants, especially the varieties of particular forts, when they are numerous, such as in many of the flowery-tribe,

as auriculas, carnations, tulips, anemonies, ranunculas, and the like.

With respect to watering the Nurfery-plants; this may be very requifite in dry hot weather in fpring and fummer, to feed-beds and tender feedlingplants, while young, and when first planted out till they have taken good root; also occasionally to new-layed layers, and newly-planted cuttings, in dry warm weather; but as to hardy trees and fhrubs of all forts, if planted out at the proper time, that is, not too late in spring, no great regard need be paid to watering, for they will generally fucceed very well without any: indeed where there is but a few, you may if you please water them a little, if it proves a very dry fpring in April and May; but where there are great plantations, it would be an almost insupportable fatigue, and great expence; as in many public Nurferies, where they each winter or fpring plant out fifty or fixty thousand trees and shrubs, and in some double those numbers,

Every winter or spring, the ground between the rows of all forts of tranfplanted plants in the open Nurseryquarters must be digged; this is particulary necessary to all the tree and shrub-kind that stand wide enough in rews to admit the fpade between; which work is by the Nurfery-men called turning-in; the most general feafon for which is any time from October or November until March, but the fooner it is done the more advantageous it will prove to the plants, The ground is to be digged but one spade deep, proceeding row by row, turning the top of each fpit clean to the bottom, that all weeds on the top may be buried a proper depth to rot: this work of turning-in is a most necesfary annual operation, both to destroy weeds, and to increase the growth of the young Nurfery-plants.

In fummer be remarkably attentive to keep all forts clean from weeds; the feedlings growing close in the seminarybeds must be hand-weeded, except the plants of all forts that grow in rows wide enough to introduce an hoe : this will prove not only the most expeditious method of destroying weeds, but by loofening the top of the foil, it will prove good culture in promoting the growth of all kinds of plants: ale

ways perform this work of hoeing in dry weather, in due time before the weeds grow large, and you may foon go over a large space of ground, either with a large drawing-hoe, or with a fourfling hoe, as you shall find the

most convenient.

According as any quarter or com-partment of the Nurfery-ground is cleared from plants, others must be substituted in their room from the feminary; but the ground should previously be trenched and lie some time fallow, to recruit or recover its former vigour; giving it also the addition of manure, if it shall feem proper; and after being trenched in ridges, and having the repose only of one winter, or fummer, or a year at most, it will sufficiently recover its vegetative force, and may be planted afresh.

It will be of advantage to plant the ground with plants of a different kind from those which occupied it before.

The tender or exotic plants of all kinds that require shelter only from froft, whilft young, as we formerly mentioned, and by degrees become hardy enough to live in the open air, should, such of them as are seedlings in the open grounds, have the beds arched over with hoops, or rods, at the approach of winter, in order to be sheltered with mats in severe weather; and those which are in pots, either feedlings or transplanted plants, should be removed in October in their pots to a warm funny fituation, sheltered with hedges, &c. placing fome close under the fences facing the fun, where they may have occasional covering of mats in frosty weather; others that are more tender may be placed in frames, to have occasional covering either of glasslights or mats, &c. from frost; observa ing of all those forts here alluded to that they are gradually to be hardened to the open ground, and need only be covered in froity weather; at all other times let them remain fully expofed, and by degrees, as they acquire age and strength, inure them to bear the open air fully; fo as when they arrive at from two or three to four or five years old, they may be turned out into the open ground. The forts requiring this treatment are pointed out under their proper heads,

NUT.

NUT. See FILBERT. Bladder Nut. See BLADDER. Earth Nut. See EARTH.

Physic Nut. This plant grows naturally in the West-India islands, where the feeds are used as physic-; it rifes with a stalk to the height of 12 or 14 feet,

Piftachio Nut. See Piftachio.
Malabar Nut. See MALABAR.
Wall Nut. See WALNUT.
NUTMEG, [Nux Moschata.]. The

kernel of a roundish nut which grows In the East-Indies. The outside covering of this fruit is foft and fleshy, like that of a walnut, and fpontaneously opens when the nut grows ripe; immediately under this lies the mace, which forms a kind of reticular covering; through the fiffures whereof ap-pears a hard woody shell that includes the nutmeg. These kernels have long been made use of both for medicinal and culinary purpoles, and deservedly looked upon as a warm agreeable aromatic. They are supposed likewise to have an astringent virtue; and are employed in that intention in diarrhœas and dysenteries. Their astringency is said to be increased by torresaction, but this does not appear to the tafte: this treatment certainly deprives the spice of some of its finer oil, and therefore renders it less efficacious to any good purpole; and if we may reason from analogy, probably abates of its astringency. Nutmegs distilled with water, afford a large quantity of effential oil, refembling in flavour the spice itself; after the distillation, an insipid sebaceous matter is found fwimming on the water; the decoction, inspiffated, gives an extract of an unctuous, very lightly bitterish taste and with little or no aftringency. Rectified spirit extracts the whole virtue of nutmegs by in-

the properties and the properties of the propert

fusion, and elevates very little of it in distillation: hence the spirituous extract possesses the flavour of the spice in an eminent degree.

Nutmegs yield to the press (heated) a confiderable quantity of limpid yellow oil, which in cooling concretes into a sebaceous confistence. In the thops we meet with three forts of unctuous substances, called oil of mace, though really expressed from the nutmeg. The best is brought from the East-Indies, in stone jars; this is of a thick confistence, of the colour of mace, and an agreeable fragrant fmell: the fecond fort, which is paler coloured and much inferior in quality, comes from Holland in folid maffes, generally flat and of a fquare figure: "the third, which is the worst of all, and ufually called common oil of mace, is an artificial composition of ferum, palm oil, and the like, flavoured with a lit-tle genuine oil of the nutmeg. These oils yield all that part in which their aromatic flavour retides, in distillation, to water, and to pure spirit by in-fusion: the distilled liquor and spirituous tincture nearly refemble in quality those prepared immediately from the nutmeg. The officinal preparations of nutmegs are, a spirituous water, effential oil, and the nutmegs in sub-stance roasted. The nutmeg itself is used in the compound horseradish water, compound spirit of lavender, cordial confection, cardialgic troches, and fyrup of buckthorn; its effential oil, in the volatile aromatic spirit, and the expressed oil in mithridate and theriaca stomachic and cephalic plasters and cephalic balfam.

NUX VOMICA. This is the poisonous seed of a plant growing in Malabar.

OAK

himmed providence of

AK, [Quercus.] Botanifts and nurferymen reckon a great number of species; but as we write chiefly for the use of the farmer, we shall confine ourselves to the cultivation of

the fovereign of the woods.

The oak is a large tree with a rough bark, foreading branches, and large fleaves, deeply wavel at the edges: the flowers are inconfiderable; they are a kind of brown threads : the fruit is the acorn, standing in a cup, and growing in fome trees on a longer, and in others on a shorter foot-stalk; from which difference some have diftinguished two kinds of oak. Others have, in the fame manner, divided the oak into two kinds, one of which rifes more in height, and the other, which they call the wild oak, spreads more into branches. But these are accidental -varieties, not distinct kinds.

The oak will grow in almost any foil: this we fee in fact, as we find oaks on all kinds of land. We fee it on clayey, fandy, and stony ground : but those who have made strict observations declare, that in the clayey foils it obtains most firmness, but in these the growth is slow. The best earth for oak, where there is choice, is a rich loam. This is a found and commonly a deep foil. Too much wet is an enemy to the oak, fo that it should be guarded against; and 'tis principally for this reason that it grows best on fomewhat rifing grounds, for they are naturally more dry than the abfolute flats on which the wet lodges and remains.

When the ground is too moift, the oak puts out most branches, and the trunk is defrauded of its due nourishment; in very dry and exposed places it grows low and stubbed.

The timber in too moift ground is

fofter, and in these hilly and barren places it is harder than its ufual quality, but 'tis there of an uneven grain. and lefs ufeful,

The finest oak timber is that which has grown on a firm good foil, rather inclining to clay than any other par-ticular quality, and where there is not

too much moifture,

abatelli mont. in

capital and the

The oak is propagated three ways; first, from feed, or the acorn ; fecond, by raifing in a nursery, and then trans-planting; and, thridly, by taking up young sets out of the woods, where they have rifen from the fallen acorns, and are usually plentiful enough.

Of these methods we altogether prefer that of raising the oak from the acorn, in the place where it is to grow. The oaks from the nurlery are commonly twice transplanted to come to their standing place, and this gives them two checks greater or less; and disposes them twice to an unevenness in the growth : as to the fets taken out of woods, they are the worst way of all. Idleness or frugality may tempt those who will not raise, or purchase the young fets out of a nursery, to do this, but these wild ones, having been raifed under too much shade, are usually very ill shaped; and as they are planted out into more exposed places, they commonly get an ill growth.

Of raising Oaks by Transplantation.
If any one in spite of these disadvantages will plant the wild fets, the method he is to take is to cut them off close to the ground, with a sharp knife, and by a flanting stroke, as foon as they are planted. This gives the root time to recover fome ftrength, and as it affords a new shoot, that is often better than the original plant. But in this case the disadvantage is plain, for it is evident that it would be better

this fhoot rofe from the root than it; but it is prudent to leave a compe-

from a flump.

Those who raise oaks in a nursery for transplantation must observe a different method from what is to be followed by fuch as fow them where they are to ftand. They are to proceed thus. Let the acorns be shook, as foon as fully ripe, from a flout branch of a well-growing oak, and immediately fown in the nurfery, for the air withers

They are to be fet in lines, at two inches alunder, and about two inches and a half deep in the ground. They will shoot the succeeding spring, and they should be suffered to sland till that time twelvementh; then they are to be transplanted into another part of the nursery, and let at eighteen inches distance, in rows three feet afunder. They are to be watered a little when first transplanted, but this must be carefully done, for too much water is apt to hurt the oak, especially when young.

The oak is a particular tree, and requires, as will as deferves, a particular care in its management. In many lit-tle respects the conduct is to be different from that observed in the raising the generality of trees; and it is to a want of regard to thefe, that so many young oaks are loft more than of other

The young trees thus transplanted are to be watered formetimes in dry feafone, and kept clear from weeds. It is alfo good to dig between the rows; for this, by breaking the foil, affords them a greater supply of nourishment, and at the same time it cuts off the straggling or far-fpreading roots, which will make the young crees bear their next tranf-

plantation the better,

During the time they fland in thefe beds they are to be regulated in their growth, but in this only a little is to be done. They who cut off the head destroy the tree, for if there be not a leading shoot to conduct the top, the whole will perift. Neither are many of the fide branches to be taken off, but only fuch as tend to too much fpreading. The planter is to remember that the trunk of the oak is to be his best benefit; he must therefore cut off fuch very spreading branches, as would draw the sap away from it and starve Vol. II.

tent number of the others, to draw up the fap, When an oak in this young state is too close pruned, the head is always feen to grow over proportioned, and weighs down the tree, and fpoils

ita future progress.

When the trees have flood about four years; that is, when they are between five and fix years old from the forwing, they may be conveniently transplanted. They are at this time of a pretty fize and having been thus pruned thew well. It is dangerous to move them in the common way, when they are older, for the oak bears removing, when grown to a fize, worfe than any other tree.

The time for transplanting them is just before they begin to shoot; and it s prudent to chuse a showery featon : if no rain fall, they must be gently watered, as before directed, and staked

up to keep them ftrait.

This is the method for raifing oaks by transplantation; and when they are wanted for beauty and ornament, as for chumps imparks, and for wil-dernesses in large gardens, this is a very good way, because they may be had of a proper growth from the common nurferies : or from the owner's own flock, raifed there for other purpefes, But when oaks are intended for timber; and use and value are more fludled than ornament; 'tis by much the best method to raise them from the acorn, in the places where they are always to continue,

Of raising Oaks from the Acorn. When the oak is to be raifed immediately from the acorn, a different method, and different season, are to be

observed for fowing:

Let the acorns be gathered when full ripe, from athriving tree, and inimediately spread upon the floor of a dry week, frequently turning them, let them be put up in large garden pots, with a quantity of dry fand, and laid by for the winter.

Early in fpring let the ground be marked out where the plantation is to be made, and at the distance of forty feet every way, let the holes be opened for receiving the feed. Thefe are to be dug two spit deep, and the earth well

broken, four or five acrons ready topu t into each, and covered two inches deep, and when they have fhot, and acquired a little growth, all the plants, except the one best in each hole, are to be taken up, and that fingle plant in each hole is to be nurfed up for fome years with due care.

The head of these young trees is to be fuffered to grow, and none of the branches are to be cut away, except fuch as spread out too wide, as in the nursery; and if it happen that in spite of the care in the choice of those shoots which have been suffered to stand, any one be uneven; the best method is to cut it off at the ground, and wait for

a new and better shoot.

A plantation of oak thus made, if the foil be tolerable, is a fortune for the fucceffor in the estate; but it is not limited to that; men enter too late upon these studies, otherwise they might reap the benefit of their plantations themselves. If a man would begin to plant at eight and twenty, and should live to fee fixty-three, there is a space of five and thirty years, which is a time for raising even an oak plantation, flow as that is in growth, to very confiderable value, though not to its full price, or nearly to that.

It is not easy to give what can be called a middle calculation for the growth of the oak, it differs so prodi-giously in respect of the soil, situation, and other circumstances. We have feen oaks of thirty four years fourteen

inches in diamater.

An eak of this bigness is but advancing toward the proper time of felling, and towards its value; but if the necessities of the owner induce him to fell thefe, the price of the worst tree among them would pay for the labour and charge of the plantation.

If the young plants, when they rife in these spots, appear almost above the ground, or stand too high with their roots, the best method is to lay up a parcel of fine earth against the bottom of that which is the most thriving shoot. This happens sometimes from the acorns being not fet deep enough, and fometimes from the weather: for after a frost the mould will rife, and bear up the young shoot with it.

Acorns are not to be buried too

deep, especially in a moist soil, for they often rot: and, on the other hand, they must not be fet too shallow: for it not only makes the shoot stand too high; but frequently the field mice find them out, and devour the hopes

of the plantation.

The quantity of ground taken up by this plantation, at forty feet diftance, is not to be supposed wasted: for though the oaks will, in their larger growth, require that distance, they do not at first. For many years ashes may be raised upon the ground between the oaks, for poles, and cut to a great advantge. Underwood of all the furubby or coppice wood kinds may also be planted for a time, if the ground be fit for it : or it may be grazed, and will lofe little of its value for many years. Nay, the planting the trees at this distance is the only way to preserve a value in the ground for these purposes; and when the foil is good, it will continue to yield fine pasture,

Of the Uses of the Oak.

No plantation whatsoever exceeds that of oak, when made in this manner: and to those who will suffer it to stand a proper time, none equals it in value. By this management the trees will all rife with a fingle strait and upright stem, and their branches spreading every way with a beautiful regularity, make, when cloathed with their large and fair leaves, a beautiful appearance. Their shade is preserable to that of any tree whatfoever : their very imperfections and excrescences, the oak apples, oak cones, and oak grapes, are beautiful; and the air is perfumed and rendered healthy by blowing over them,

Among the excrefcences of the oak, we have not followed the common custom of ranking the herb, called missere; because it is not an excrescence, but a regular plant, rising from its own feeds, but whose place of growth is not the ground, but the bark of some tree; and no trees afford

it so feldom as the oak,

Its fruit, which a good and well-grown oak bears annually in vaft abundance, is an excellent food for Hogs. No fruit feeds them fo well, it gives their flesh also an excellent tafte. The flavour of the Westphalia hams is owing to this food. They are made from wild swine that live in the forests; and it would, doubtless, be an improvement of our hogs flesh intended for that service, if the creature were fed with acorns; which can only be done to advantage by letting them run about.

That they give a flavour to the flesh of such hogs as eat them in abundance, is not to be questioned; for our country people, who are not accustomed to that taste in bacon, always seed their hogs some time with pease after the acorns, to take off the flavour.

The effect of food on creatures in

The effect of food on creatures in giving a taste to their flesh, is not to be doubted. The Heath-Cock of Germany is not eatable in autumn, except by the peasants, because its flesh tastes fo strongly of the Juniper berries he eats at that season; and as to the effect of particular food on hogs, an instance is given in the Phisophical Transactions of the very bones of a pig being tinged red, by its eating madder root at a

dyer's.

The hog is the creature that eats acorns mott freely and naturally, and is beft fed with them; but what nature has meant as food to one animal, may, by proper management, or in neceffity, be made food to others; all poultry will eat acorns if broke fmall, and given them among other food, and nothing fattens them more. They have also been given to oxen, and other cattle, among their dry food; and we read that before the cultivation of land was so well known, they were, in part, the food of mankind.

Their effect in fattening the hog is supported by sufficient experience. A peck of acorns a day, with a little bran, will, it is affirmed, upon good authority, make a healthy hog encrease a pound each day in his weight, for fifty or fixty days together.

The bark of the Oak ferves the tanner, and fetches a large price; the dyers also use it: and it has been discovered some years since, that the young branches of the oak cut and ground to pieces in a mill, answer all the purposes of the bark, and that in as great persection on these occasions.

We have mentioned faw-dust among

the articles useful as manures; and experience shews that none is soexcellent for that purpose as the dust of the oak; this is natural enough, because the oak is the most firm and folid of all our timber. Those who have tryed the experiment say also, that of the kinds of wood ashes used in dressing of land, the oak claims greatly presence.

All these however are but, as it were, accidental articles of value in the oak, its great worth is in the timber, which in solidity, strength, and soundness, exceeds all our other kinds, and is therefore the most fit for great and lasting uses. Of all kinds of wood yet known in this part of the globe, the oak is in its service the most universal.

Befide its prodigious use in our shipping, it is called for, on a thousand occasions, in buildings, and for instruments. It resists the injuries of weather more than any other wood, which is not a wonder; for even the fire takes effect upon it much slower than on any other timber whatsoevers and some of it is so hard that the best tools will scarce work upon it.

In water-works, where the timber is exposed both to the air and the water, no wood stands like the oak; and no wood is equal to it in the support of burthens. The ebony and some other foreign woods, when they are very hard and firm, cut as disficultly as oak, but if they are tryed in the supporting of burthens, they start and fiy under half the weight that a piece of oak of the same fize will support with perfect safety.

Even the defects, as they naturally appear of oak, serve to give it strength for certain particular purposes. Thus it is not unusual for an oak trunk to grow a little twisted: this may be discovered through the bark as it is standing, but is very visible when the tree is felled and stripp'd: the trunk of such an oak is useful beyond any other, for the supporting vast weights. Where posts and columns are required for such a purpose, nothing equals it.

fuch a purpose, nothing equals it.

In buildings, the straitest, finest, and evenest growing pieces of oak are usually wanted, and they bring their price accordingly; but for engines, where a vast strength is required, the

body of one of those stubbed, and rough is made of the oak is better than any grained oaks, which are not fit for other. other purposes, and which are so hard that a tool will scarce pierce them, is fuperior to any thing.

There is no oak, while found, that is not fitted for fome purpose. Those parts which will not do for greater uses make pales, polts, coopers ware, and laths; all which bring their price to the owner : even the least pieces are worked into the pins and pegs used in tyling, and that way are of value.

Oaks that grow crooked, and firm withal, make what they call knee tim-ber for thipping. The knottreft and roughest pelces are fit for piles in water-works; and mill wheels, and spokes for other wheels, are made from the proper pieces.

Befide all the ufes of the oak in its various conditions, confidered as timber tree, we are yet to confider it as a part of the coppice wood planta-tion; and no kind is there more valuable. The oak maintains its character in every condition, and is every where of value.

When the oak is fown among the coppice wood, to be felled with it at tweive or fourteen years growth, it yields excellent poles for hoops, usual to make these of ash, and some take hazel; but the preference is due to the oak hoop beyond all degree of comparison: the ash does not exceed the hazel for hoops half fo much as oak exceeds the a/h. An oak hoop will laft out feven of any other timber. The finaller kinds of poles ferve as

staves, and the least make our walking sticks. The root of the oak, where it is knotty and firm, has also great beauty when used by the turner or inlayer.

Thus we fee that this ferviceable and univerfally useful tree supplies us with materials of all kinds, as timber, from the ribs of a man of war to a walking staff, and from the main beam of a house to the pegs in the tiling; not the least particle of it but is useful. Even such as is fit for nothing else in the coppies oak is good for firing; whether split into billets from the larger pieces, or cut into faggots, it excels other wood, 'The charcoal that

Of the Growth of Oak Trees.

The growth of the oak is not only vary different on various foils; but it has been found by nice observation, to very exceedingly at different periods on the same place. For instance, an oak has been observed to grow very freely and very well for twenty fucceffive years: at the end of this time it has come to a stop, and has for ten or a dozen years made little progress. From this time it has begun to grow again, and has continued in its usual way increasing visibly in height and thickness.

This, though feeming to arise from fome hidden cause in the tree itself, is really owing to the foil. The tree being planted in a good earth, spreads out its roots, and flourishes extreamly well, fo long as they remain within the compass of that coat or layer of the ground; but when they have pierced through that, and got into some other starving and poor earth, they receive little nourishment, and the tree comes to a stand. It would continue so all along, were it not that the same roots pushing deeper and farther, find good soil again. Thus in the present in-stance, the good soil holds the roots twenty years, and affording sufficient nourishment, the tree all that while grows freely. At the end of that time they penetrate into some unfavourable layer; there they are kept twelve years, all which time the tree barely lives, and hardly grows at all; till at the end of this period the roots piercing into another bed of good matter, supply the tree as at first, and it then grows and increases again as it did from the beginning.

It has been observed already, that the oak will grow in any foil, though it thrives differently according to the nature of that earth: but the difference that is made by foils in the speedyness or flowness of the oak is not all; for the very grain of the wood is affected

On barren heaths, where the bottom is flony, the oak is ill-grained and coarse: the grain of that oak which has been raised in sandy soils, is fmoother and evener than any: but that which has been fed by a good firm loam, inclining to clayey, is the right fubstantial and true grained timber.

Though the oak will grow any where, it will be stopped in its growth by the interpolition of a bed of unfavourable matter in its way: it will therefore be worth the planter's while to bore the earth with an auger where an oak plantation is defigned to be raifed : and that the planter may know to what a wast fize and value oaks will grow when the foil favours them, not only in condition, but depth, we shall give him an account of what bigness some have arisen to in England, as supported by unqueffionable authority

In Worksop Park the Duke of Norfork had an oak which spread almost three thousand square yards. Near a thousand horse might stand under the shade of it: Plot, in his Oxfordshire, tells us of an oak at Clifton, that spread eighty-one feet from bough end to bough end, and fhaded 560 fquare yards of ground. 'Twas computed five and twenty hundred men might stand theleered under it. The famous Robur Britanicum in Lord Norrey's park at Ricot, was computed to be able to shelter between four and five thousand men.

The mainmast of the old Royal Sovereign was ninety-nine feet long, and near a yard thick, all of one piece of oak; and fome of the beams of that thip were made from another oak near five feet thick, and were forty feet in length.

What must be the value of these trees is very evident; and there is no reason why any man who will take the pains in raising his oaks from the acorn upon the fpot with due care, and fee that the foil be perfectly fit for the growth, may not leave an inheritance of fuch to his posterity.

The oak requires less lopping than

Of the Felling of the Oak.

If it be true that an oak continues depends upon the featoning.
growing a hundred years, certainly ... The plainest and most familiar metis best not to fell that tree till after thod is to trust to time only, taking

the full period of the growth, when it can conveniently be fuffered to stand fo long; but with a view of advantage, it is idle to think of its flanding any longer: for certainly it can never be better than when at a full maturity.

This then is, in general, the best time of felling, but ne particular period can be limited for each tree; for of those raised from acorns of the same foil, some will thrive better than others,

More things enter into the confideration in the article of felling the oak than any other timber; as the feparating of the bark for the tanners, and the like. The best season is in April, which savours the separation of the bark; it then rifing freely and eafily.

At this feafon the trees being marked out that are to be felled, the first thing to be done is to cut off fuch arms as may damage the trunk in the fail. The manner of doing this is, by beginning below close to the trunk: when they have thus cut the arm about a fixth part through, they begin at the top near the trunk alfo, and when they come near meeting the other cutting, the arm falls off without splitting.

When the branches that may be hurtful in the fall are thus removed, they are to go to work upon the trunk, cutting it down as near as possible to the ground, because the length of the timber is a very great article in its value befide the adding to its quantity.

When the oak is down, its trunk is to be ftripped of the bark, which will come off freely at this feafon, because the fap is full and flowing; as the back is taken off, fet it up in fuch a manner as it may dry best. After this take off the bark from the branches that were left on, and fet up in like manner: when this is done, let the bran-ches be cut off, and then cut it into length's for fale.

Of the seasoning Oak, and judging of the Timber.

any other tree, whether it be intended for beauty, or for use. Nature rarely ever-proportions the branches to the trunk; and they forced with great beauty, and grow in value with it.

The weod being thus felled and cut, the next confideration is the seasoning of it, which is done several ways; but alk of them require time. Green oak is fit for very sew purposes; and a is fit for very few purpoles; and a agreat deal of its value in many cases

care to prevent accidents in the mean while. Thus let the timber, cut as before directed, be laid up till dry in a careful manner. Let it be taken off the ground at a dry time, and laid up in an airy place, but out of the reach of the fun, and defended from the winds, both which crack it in drying. Let blocks be put between the feveral pieces, to give passage to the air. If this be omitted, they grow moist and mouldy, or breed toadstools. In this manner time will take a proper effect, the timber will shrink gradually and regularly, and being thus feasoned, it will stand when it is employed in building, or on other occasions.

Another way of feafoning oak timber is by burying it for some time under ground: but this must be done in a dry foil, otherwise it will require more seasoning when it comes out than it did when it was put in.

The best method of all for many purposes, and particularly those which require the best seasoned timber, is that we learned of the Venetians, which is called the water feafoning. This is done by finking the timber under water; and no way is fo good to prevent its splitting. The Venetians prevent its splitting. keep the timber for their fea fervice two or three years under water before they use it, and then it stands firmly.

The water feafoning is commonly done in England in this manner. When the oak is cut into boards, or pieces, they fink it under river water for fourteen or fifteen days. Then they take it out, and lay it up care-fully to dry in a cool airy place, as directed in piling up the fresh timber; preserving it from winds and sun, but

leaving the air free paffage among it.

Oak that is cleft is not fo apt to fplit and crack as fuch as is entire: and round pieces are always more ready to crack than fuch as are fquared. Thefe are standing rules, and the workman it to conduct himself in his choice accordingly: pieces that are bored through feldom split. In general, the more the oak is in its natural condition, the more liable it is to split; and the more it has been cut and wrought, the lefs.

Burning the ends of pofts of oak been accounted an excellent method out,

to preserve them a long time; and some have carried this practice so far, as to burn the ends fo deep as to impair their strength. It is at present much disputed by those who pretend experience on their fide, whether this practice be of any use at all. If not, 'tis a great deal of trouble thrown away.

This burning naturally preserves that part of the post from the worms by which it is subject to be gnawed under ground; and the Dutch, to prevent the fame accident under water. cover over their piles and ship bottoms with pitch and tar; on which they fprinkle fea fand with powder of fea fhells among it, and flakes of iron, fuch as fly off in the hammering.

In the choice of oak timber, the purchaser should examine the weight and the grain; the heaviest timber in this kind is always the best for purposes that require great strength and foundness, and the smoother and evener the grain, the better for most occasions. Oak is not to be trusted in any nice works, till it has been well seasoned: and that from full-grown trees is preferable to fuch as has been cut from But when the tree has flood beyond its time, the wood becomes fomewhat brittle; this is the first

tendency in oak to decay.

To judge of oak as it stands is an article of great consequence very frequently, and nothing is fo difficult : it is a common thing to purchase trees standing; and in oak 'tis of great importance to be able to guess at their value. Were all good, nothing would be so easy; for the question might be answered by measuring, instead of guesting; but nothing is so capable of deceiving as a tree while it stands. There may be many infirmities which 'tis impossible to discover till it is down; and which then greatly leffen the value. Such as may be discovered we shall point out; as also the figns of decay

In the first place, if the head of the tree be in any part dead, 'tis a shrewd fign that there are more faults in the body: in this case it is a very good method to bore into the trunk with a fmall piercer made auger fashion, and that are to be let into the ground, has observe the condition of what it draws

If in any tree there be a swelling vein perceived rifing above the level of the rest of the tree, and covered by the bark, it is a fign all is not well within. When this vein twifts about in the manner of a stalk of ivy, it is worst of all; and feldom is feen but where the heart of the trunk is rotten.

Finally, another very good method of judging is, to open the earth about the roots; and examine in what condition they appear. If they are fresh, found, and full of juice, it is a fign all is well above; but on the contrary, when many of them are found decayed without any visible cause in the ground; when fome of them are rotten, brittle, and mouldy, all is wrong in the body of the tree. This is a part not fo much attended to, but a decay here is a more fatal fign than the deadness of

a part of the head,

Upon the whole, a great deal is to be judged by the general aspect, and to the white, if not superior in some that much more by those who are ac-customed to these things than by Oats, be ftrangers. There is a look of health found, which no other perfectly has. And tho' people who should be judges are often deceived, yet it is their want of observation, or their want of know-There will be faults which no person whatfoever can discover till they are feen in cutting through the tree; but the greater part of those which debase the value, are not of this kind: they may be gueffed at leaft, if not certainly known, from fome one or another of these marks on a careful inspection.

Ewer-green OAK, [Ilex.]

See HOLLY.

OAK of Jerusalem, [Botrys.] This plant is a native of America, where the feeds are given for worms in children. It is propagated by fowing the feeds in the fpring.

OAK Bark. See BARK.

OATS, [Avena.] The oat is diffinguished from other corn, by the The oat is grain growing in loofe panicles.

There are three principal forts of it. 1. The common, or manured white.
2. The black pats: which are

omitted in Gerard and Parkinson, though in some parts of England they are more fowed than the former.

3. The naked oat : much fowed in Cornwall.

To these we may added two others,

very confiderable.

4. The red or brown oats; and feme, I suppose, reckon these the red and the gray, and all of them comprise the large Poland oat under the name of white; the feed of it being brought from Poland, gave it that name. And as it degenerates here in a few years, it is often brought new from thence. It is apt to thed after rain.

The white oat has undoubtedly the larger kernel, and turns out more meal in the grinding than the black oat; the meal of a bufhel of the white being near three pecks from the miln, and that of the black but two pecks; but then the white oat requires richer land, and will not bear cold fo well: and as to every other article, but what they call the yield, the black is equal

Qats, being a very temperate mild grain, are fit for almost all manner in a tree that is perfectly well and of uses and purposes any forts of corn can be ; and being an hardy grain, it will grow in almost any foil, and that with the leaft culture of any grain whatfoever, and being very prolific, will ledge, that often leads them to it. all things confidered, be found the most profitable of any grain whatfoever (ex-

cept wheat.)

It is commonly known and observed. what great fatigues and labours the Scotch have frequently gone through, when supported only by a small quan tity of oatmeal, which is a manifest proof of the goodness and spirit of that grain that could enable man to go through fuch toils and labours; and it is very well known, that most of the northern peasants have little else to support them in their hard labours, particularly in that of getting of stone; in which work they have been known to fweat day after day, with no other nourishment but out cake (bread) and water; and the better of them, with only an addition of a little butter and cheese, and a little whey or butter-milk to drink, feldom tafting flesh meat or any malt liquor whatfoever.

Oats, when malted, make a very pleasant ale, and are frequently used for that purpole: and they are used in the kitchen in a thousand particulars, in which the flour is preferred to the flour of all other grains; and there is no pretence to set up any other as equal to it, except wheat, which to be sure is to be preferred before it.

It is also exceeding proper for the feeding of all forts of sowls, and swine, making the sweetest bacon of all feeds; though it is thought very adviseable to give the swine a sew pease, toward the end of their feeding, in order to harden their fat.

The excellency of oats, as the best and most wholesome food for horses, is allowed by all; and that, when they have been kept till they are thoroughly dry, there is no danger of those ditempers which commonly attend, and are frequently fatal to those sed on heans

They are equally useful for the feeding the cow or the ewe, to help them to milk, and to nourish their young; and at the same time will support the ox in his labour, or feed him sat for the slaughter. And the straw is valuable for food for beafts, beyond that of all grain, and when some of the lightest oats are left in it, and only the best threshed out (which is called batting) it is thought very good food for beafts; and packs of hounds, and all other dogs, are commonly fed with oats, when ground down.

As to the foils, it has been mentioned that they will grow on all, and do very well on most, where a crop of corn can be reasonably expected; yet oats certainly do best on the best ground, for which we may appeal to common experience, when they are sown at the first breaking up good ground, or when the ground is well manured for them, which is common in the north; and in the instances before, and which will be mentioned hereaster, also sully confirm the truth of this.

The feed usually allowed for an acre is four Bushels; but in feveral places, they fow fix or more, where the ground is poor, or where such an ill custom has prevailed. In this article of feed, the farmer ought to be careful in getting what is good, and changing it from different forts of soils as in any kind of grain whatsoever,

fince he will find it equally beneficia; Formerly they used not to fow oar

Formerly they used not to sow oatill March, but of late years they commonly plew for them at the beginning of February, and sow and harrow them in from the middle of February, and so on; and now apply to them in this particular, the saying, the sooner in the ground the sooner out; and find by experience, that their crops are generally ripe sooner than they formerly were when sowed later.

If the fowing be deferred long, as it fometimes is till April, then it should be well harrowed in; and in some places the wetness of the land almost obliges the farmer to the sowing so

Miller mentions cats as a very profitable grain, and that the usual produce is five and twenty bushels; though he has sometimes known more than thirty on an acre. This is a very poor account of the produce of this grain, fince four quarters are common on very indifferent ground; and fix or seven is no extraordinary crop; and ten quarters are frequently had with only one plewing without any surther trouble.

There are three very confiderable advantages the oat claims, which no other of the white corns do; nor, indeed, any other fort of grain common amongst us, has any pretence to vie with it in, with the least appearance of reason.

The first is, that it will grow and pay frequently very well on those lands, which will not answer to the sowing any other fort of grain: and this advantage is generally allowed the oat by all who write on this subject; which they have rather carried to an excess in its behalf, when they say, it will grow in all countries, and on all lands; that there is no ground too rich or too poor for it; which cannot be said of any other grain whatsoever. So that in this respect oats have undoubtedly the advantage above all other grain whatsoever.

The next advantage of the oat is, that it is pretty certain to bring a very good crop, on the breaking up any any good meadow or pasture ground,

The third particular advantage of

the oat is, the benefit arifing from the goodness of the straw for food for cattle; and, tolerable good crops may on a medium be valued at twenty shillings per acre, in which no other straw can be compared to it as to the sweetness of it for food; nor indeed is there any other straw but wheat of any value to speak of. And though wheat straw excel it for thatch, yet oat straw will last several years for that use; and, on the whole, may justly have its straw reckoned amongst the excellencies belonging to the oat.

There is another advantage it certainly has over the two most esteemed forts of grain, wheat and bailey, which is, that it is got with less plowing, requires not so fine a tilth, and not near so much manuring in general, as they do to procure an equal respective proportionable good crop; all which will be saved in the farmers out-goings.

Lastly, It is superior to all other grain but barley in its capacity of releving the foreign graffes to be sowed with it, from which a great part of the advantage of all the new husbandry particularly depends.

A late writer gives the oat the preference to barley, in this point, in the following words: "An oat crop is the "properest corn of all others, to fow any of the grass feeds amongst, is the ground is in heart, because the stalks of oats are apt to stand fiffer than barley, and thereby the crop of grass is in less danger of being spoiled."

This author justly observes, "If the ground is in heart," fince the land fet apart for oats is very feldom fo well manured for oats, when the grass seeds are to be fown in it, as it is for barley; and, confequently, a less valuable crop, of the graffes is to be expected when the land is in a poorer condition: but the right way of judging is, when they are in the fame equal condition of goodness; and then to see, which would answer the best. But even in this case I would not infift on its superiority to barley in this particular, but only fay it is equal to it: for the oat has other sufficient advantages above the barley in its particular departments or on lands in which barley cannot fo well be cultivated.

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The oat has one farther advantage; that it may be kept the securest and in the easiest manner of most forts of grain, if not of all kinds whatsoever. It is little subject to receive damage when housed in the barn, or placed in a stack, on account of the nature of the straw, which is both sweet and dry, and the least subject to be musty of any fort.

Oats will also keep very well when threshed, and laid by in the chaff, without farther trouble or care, provided they be not laid by wet, or wet be permitted to come to them, in such a degree as would spoil any other com whatsoever.

But the principal method of fecuring the product of this grain, where it is used as bread, is by first grinding it, and making it into meal, and then putting it close down in an ark of wood, where it will keep good many years. This method is so well known in the countries where the meal is generally used for bread, that there is scarce a family but has one of thefe arks kept under lock and key, either in the dwelling-house, or in some building adjoining to it, or in their barns, main which those who are able, keep a fufficient stock for their families, from time to time; and those who can keep it for a rifing market, often fell at the fame proportionable profit as those do who can save wheat till it rises. It is very common to put four hundred pecks of meal into one of these arks.

Wild OATS. A species of oats disficult to be extirpated where they have once taken possession, for ripening before harvest, and scattering their seed round them, they will remain in the ground till it is ploughed up again, though it be for a whole year, some say sour or sive years, and will then come up with the corn. The furest way to destroy them is to lay the ground down to clover, and to mow the oats and clover together before the oats are ripe.

OCTOBER. The tenth month of the year.

As October is the only time to crop a garden before winter, omit not any thing ordered now till next month.

P

Aro-

Aromatic herbs and shrubs, in beds, weed; and spread some earth over

Asparagus-stalks cut down, hoe the weeds, and spread earth from the paths

Hotbeds prepare for forcing, and plant (three-year-old plants) for the

Beans, the early Mazagan, must be planted on a fouth border, for the first

Borcole, plant out the third crop, and hoe the ground about the others

Broccoli, plant out the rest of the fourth crop.

Cabbages, fown in August, plant half out in a warm fituation.

Cabbage Turneps, plant early in the month, and earth up others.

Carrots fown in July, finish hoeing. Cauliflowers, plant fix to each glass, and the rest in a frame, or under a fouth wall.

Celery, plant out the fifth and laff crop, and earth up the fecond to blanch. Coleworts, finish planting,

Cress and Mustard, fow on a hotbed, 2 Endive, tie up to blanch, and plant

Eschalots, Garlick, and Rocambole, plant.

Ground, which is vacant, throw in ridges.

Hoe Borecole, Brocoli, Cabbages, and Cabbage-Turneps, end draw up earth to their ftems.

Hoe Carrots and Spinach.

Hotbeds prepare for forcing afpa-

Lettuces, plant out Cabbage and Brown Dutch on Asparagus beds, some under glaffes and on hotbeds for forcing.

Mint, plant in pots on a hotbed. Mushroom-beds cover well with ftraw and mats, to defend them from

Onions must be well weeded.

Peas, the early hotipurs, fow on a fouth border, near the wall, for a first crop. As also

Plant Asparagus on a hotbed, the

Beans, Borecole, Brocoli, Cabbages, Cabbage Turneps, Cauliflowers, Celery, Coleworts, Endive, Eschalots, Garlick, Lettuces, Mint, Rocambole.

Plant out, to stand for feed.

Carrots, Turneps,

Pot herbs and fweet-herbs on beds, weed, thir up the earth, and spread more over them.

Seeds of all forts should be threshed out, dried, and put into bags.

Sow cress and mustard on hotbeds. Peas on a fouth border.

Spinach, hoe for the last time before winter.

Weeds in every part of the garden must be destroyed.

Flower Garden and Shrubbery. Any thing ordered last month, if omitted, finish early in this.

Auriculas and Carnations remove into shelter, and in wet weather cover with mats.

Bulbous roots for forcing, in pots or boxes, plant, and finish planting all others.

Evergreens still plant, but early in the month.

Grass walks, finish laying.

Gravel walks, weed, and roll when dry.

Layering of shrubs, finish, if not

Layers and Inckers take offici rooted. Leaves, fweep up frequently.

Mignonette should be removed under glaffes, or eife inte seesp boute, or warm closet.

Recentials, finish planting.
Plant bulbous roots, of all forts, in the beginning of the month, it not

done. Box and Thrift early in the month-Perennials early in the month.

Shrubs and trees of all forts. Strawberries and Thrift for edging. Tulips, and all other bulbous roots, Seedlings in pots, place under a

fouth wall, and weed and earth feedlings in beds.

Seeds, gather in the middle of the day

Shrubberies, finish pruning and hoe-

Shrubs and trees, finish planting. Tulips, finish planting early in the month, and all forts of bulbous roots,

Turf, finish laying early in the month Weeds should be destroyed by hoeing and raking off, or they will take Trees and Shrubs in Flower.

Althæas, bramble, broom, climber, Beets, Parsley, Cabbages, Parsneps, honeysuckles, jessamin, laurustinus, paffion-flower, rofes, ftrawberry trees, in fruit and flower.

Flowvers.

African marygolds, anemonies, afters, auriculas, balfams, campanulas, carnations, china-afters, china-pinks, chryfanthemums, colchiums, cyclamens, daifies, French-marygolds, golden-rods, Guernsey lilies, lupines, marvel of Peru, mignonette, nasturtiums, pansies, pinks, polyanthuses, prim-roses, saffron, scarlet beans, scabiuses, starworts, stocks, funflowers, fweetpeas, fweet fultan, tuberofes, wallflowers, and some others

Fruit-Garden and Orchard.

Apples and pears gather in the middle of fine dry days, and plant the trees the end of the month.

Currants, goofeberries, and rafp-

berries plant,

Nectarines and peaches plant.

Orchard or fruit trees intended to be planted should have the ground prepared and the holes digged beforehand, Plant fruit-trees of all forts,

Prune all forts of wall-trees and

flone-fruits.

Strawberry-beds finish dreffing.

Vines prune and plant. Wall-trees may be pruned and

planted.

The Greenhouse.

Give air very freely in the day-time. Earth the tops of the pots.

Geraniums take in, early in the

month.

Leaves clean well before the plants are let in order, and dead ones pick off. Myrtles may be taken in, towards the end of the month.

Oranges should not remain out this

Succulent plants water sparingly. Watermyrtles, oranges, winter cherries, and all woody plants frequently. Windows open every fine day.

OFFSETS. Young roots that fpring and grow from roots that are round, tuberous, or bulbous; also the loofe, outward brown ikins, either in tulips, onions, &c.
OILS. The beards or prickles of

barley, &c. OILY SEED, [Sefamum.] See Oily

GRAIN

OLEANDER, [Nerium.] Rose bay. There are feveral varieties of this plant, all fine evergreens, and producing large clusters of fine ornamental flowers; they are exotics, brought from the island of Crete, and both the Indies, but are hardy enough to bear the open air in fummer, and green-house in winter. They are propagated by layers,

outtings, and fuckers.
OLIVE, [Olea.] The species are the European, common olive tree, and the cape box leaved olive. The European rifes with upright folid ftems, branching numerously on every fide, twenty or thirty feet high; fpearshaped, stiff, opposite leaves, two or three inches long, and half an inch or more broad; and at the axillas fmall clusters of white flowers, succeeded by oval fruit.

This species is the principal fort cultivated for its fruit ; the varieties of which are numerous, varying in fize,

colour, and quality.

It is a native of the fouthern warm parts of Europe, and is cultivated in great quantities in the fouth of France, Italy, and Portugal, for the fruit to make olive-oil, which is in fo great repute, and is transported to all parts, to the great advantage of those countries where the trees grow in the open ground: the green fruit is also in much efteem for pickling, of which we may fee plenty in the shops.

The Cape Box-leaved Olive rifes with shrubby stems, branching numeroufly from the bottom, fix or feven feet high; small, oval, thick, stiff thining leaves; and at the axillas small clusters of whitish flowers; succeeded by fmall fruit of inferior value,

These plants in this country must be kept principally in pots for moving to fhelter of a green-house in winter; for they are too tender to prosper well in the open ground here; though sometimes they are planted against a warm fouth wall, and sheltered occasionally from frost in winter, by mulching the roots, and matting their tops; whereby they may be preferved, and will fometimes produce fruit for pickling; a very severe winter, however, often kills or greatly injures their young branches; therefore let the principal part be potted in rich earth, and placed among the green-house shrubs,

Their propagation here is commonly

by layers.

The laying is performed on the P 2 young young branches in spring; give plenty of water all summer, and they will fometimes be rooted fit for pottingoff by autumn; but fometimes they require two fummers to be rooted effectually: when, however, they are properly rooted, take them off early in autumn, and pot them separately; give water, and place them in the shade till they have taken fresh root; and in October remove them into the greenhouse, &c.

Those you intend to plant in the open-ground, as before fuggefted, should be kept in pots, in order to have occasional shelter of a gardenframe two or three years, till they have acquired some fize, and are hardened to the full air; then transplant them into a warm border against a wall: mulch their roots in winter, and mat their tops in frosty weather,

Wild OLIVE, [Oleafter, Elwagnus.] There are two fpecies, the narrowleaved, and the thorny; both thefe trees merit culture, the first for the fhrubbery, the fecond for the stove; their filvery leaves render them very conspicuous, and effects a delightful variety.

Their propagation is eafily effected by layers of their young fhoots, also by cuttings, which will be rooted in one year, and may then be transplanted, placing the hardy kinds in the nursery, to have two or three years growth, when they will be fit for the fhrubbery. Wild OLIVE of Barbadoes, [Bontia.] This plant is greatly cultivated in the gardens at Barbadoes for making of hedges, than which there is not a more proper plant to thrive in those hot countries, it being an evergreen, and of quick growth. We have been informed that from cuttings (planted in the -rainy feafon, when they have immediately taken root) there has been a complete hedge, four or five feet high, in eighteen months. In England it is preferved in stoves. It may be raised from feeds, which should be fown on a hot-bed early in the fpring, that the plants may acquire strength before winter. When the plants are come up, they must be transplanted out each into a separate small pot, and plunged into a moderate hot-bed of tanners bark, observing to shade them until they have taken root; after which they

must have a large share of air in warm weather, and be often refreshed with water. In winter they must be placed in the stove, where they should have a moderate degree of warmth, and but little water during that feafon. In fummer they may be exposed abroad, in very hot weather, in a sheltered fituation. With this management these plants will produce flowers and fruit in three years from feed. They may also be propagated by cuttings, which should be planted in the spring before the plants have begun to shoot. These must be put into pots, and plunged into a moderate hot-bed, observing to shade them until they have taken root, after which they must be treated as hath been directed for the feedling plants. These plants being evergreen, and growing in a pyramidical form, make a pretty variety in the stove amongst other exotic plants.

Spurge OLIVE. See Spurge LAUREL.

OLITORY. A kitchen garden.

OLLET. Fuel of any kind,

OMY. Mellow, applied to land. ONE BERRY, [Paris.] Truelove. This plant grows wild in moift shady woods in divers parts of England, bu especially in the northern counties, and it is with great difficulty preferved in gardens. The only method to procure it, is to take up the plants from the places where they grow wild, prefer-ving good balls of earth to their roots, and plant them in a flady moist border, where they may remain undiffurbed, in which fituation they will live fome years; but as it is a plant of little beauty, it is rarely preferved in gardens.

ONE BLADE, [Smilax.] There are twelve or thirteen species, mostly of a shrubby, climbing growth, some hardy, and some of tender nature, but it is principally fome of the hardy kinds that are efteemed for culture in our gardens, having long trailing stalks, fome armed with prickles, others are unarmed, and mostly climb by mean: of cirrhi, or claspers, upon the adjacent trees and bushes, many feet high which renders them proper furniture for thickets and wilderness quarters, &c. are all exotics from different foreign countries, both in Europe, An. and America; confishing of fever shrubby, and one herbaceous kind for hardy plantations, and fome fhrubby forts for the green-house, &c.

The hardy kinds are propagated by flipping the roots, by layers, and by

The tender species may be prepagated by layers, and by dividing the roots. Perform the laying in spring on the young shoots, which by autumn or spring following will be fit for pot-ting off separately: and by roots, these being flipped in March or April, and the off-fets potted separately, they will foon take root; managing the whole as other woody exotics of the greenhouse

ONION, [Cepa.] The varieties are, Strafburgh or common oval onion, Spanish silver-skinned large stat onion, Spanish red-skinned large flat onion,

Portugal great oval onion.

Of these four the Strasburgh is the best for general culture; it is a handfome bulb, generally affuming an oval well for winter fervice.

The Spanish onions are large and flat, the white fort is of mildest flavour. Both the varieties generally turn out very profitable crops, and none excels them for culinary purposes, but they rarely keep so well after Christmas as the Strafburgh or oval onion.

The Portugal onion is a very large handsome bulb, of somewhat oval shape, although they rarely attain the fize here as in Portugal, &c. as is obvious by those imported annually, from that kingdom by the orange merchants. If, however, feeds faved in Portugal are fown here, the bulbs will arrive at a much larger fize than from feeds faved in England, especially if saved two or three years successively, which will often be so far degenerated, that the bulbs become flat, and not larger than the common onions.

This fort being very mild, is greatly effeemed for fauces, and other uses

in cookery

All these forts are propagated by seed fown annually; which, for the general crops, the proper season is from about the twentieth of February until the fatter end of March, observing however, in cold, wet, stubborn land, it is proper to defer fowing entirely until towards the middle of the laft named month. It is likewife to be remarked, that in cases of omission in sowing at the times above mentioned, it may be

performed in moist rich foils, with tolerable fuccefs, any time before the 15th of April; but remembering that the crops of the February or March fowing always bulb more freely, and acquire a much larger growth than those

fown later.

The proper fituation and foil for these crops should be an open exposure, and the land moderately light and rich; chusing however a spot of the best mellow ground in the garden, with the addition, if possible, of a good coat of rotten dung, which should be dug in, one spade deep, observing to preserve a level furface; and while it is fresh flirred, let the feed be fown, which is of particular importance. Do not however fow it when the furface is fo wet or moist as to clog to the feet, or rake.

The proper quantity of feed is about an ounce to every rod or pole of ground, but if it is not required to have them thick for culture, two ounces for three rods is sufficient.

Be particularly careful to procure fresh seed; for of that which is more than one year old, not one in fifty will

The feed may either be fown all over the piece or plat of ground, and raked in; or the ground may first be divided into beds of four of five feet, allowing foot-wide alleys between; then fow the feed with a regular spreading cast, and immediately tread the furface over evenly; then pare the alleys an inch or two deep, and cast the earth over the beds, and directly proceed to rake them length-ways, keeping an even hand, and trim off all stones.

The fowing them in beds is certainly the most eligible practice, when it is defigned to draw or cull the young onions from time to time, for market or family service, because in such cases a person can stand in the alleys without treading at every turn upon the beds, which renders the furface hard, to the detriment of the crop, as well as unvoidably trampling upon the plants themselves; and it is likewise very convenient to stand in the alleys to weed. thin, or hoe the crop.

It is a common practice in the general culture of onions to fow them thick, to allow for culling or drawing out the superabundant plants by degrees as they are wanted. We, however, advice to flow a piece particularly for general culling, exclusive of the main crop, for by a daily thinning out the superfluous plants, there is no avoiding treading upon, diffurbing, and loofening the remaining ones, and the plants thereby become of flinted

growth.

In fifteen or twenty days after the feed is fown, the plants will appear; and in a month or fix weeks after that, they will be three or four inches high, and weeds will be numerous, when they fhould be cleaned from weeds, and thinned to three or four inches distance. The weeding and thinning should be began in due time, before the weeds branch and spread, which may either be performed by hand or fmall hoeing; the latter is the most expeditious method, as one man may do as much as, three, and is also the most beneficial to the plants, for by flirring the ground about them with the hoe, it will greatly facilitate their growth, as will be obvious in a few days after the operation; a small hoe two inches broad is the proper fize; chuse dry weather, cut up all weeds, and where the plants fland close, cut them out to two or three inches diftance each way, having regard to leave the ftrongest and most promising plants,

In a month after run over them again with the hoe, and cut up weeds, and any superfluous plants that escaped you the first time; after this they will require no farther culture than pulling

out firaggling weeds.

In July the plants will begin to fwell greatly at bottom, and in August the

bulbs will be fully grown,

Towards the middle of August, therefore, examine the crop in general; when the necks fhrink and fall, and the leaves wither, it may be prefamed the bulbs are arrived at maturity, and are done growing, and should be pulled up, cleaned, dried, and housed for use; this should be done in dry weather; at the fame time hoe and rake a piece of the ground clean, and as you pull the onions, spread them thereon to dry and harden. Here let them lie about a fortnight, turning them every day or two, when, if the weather proves dry, they will be duly prepared for keeping, then take the first opportunity to house them before wet weather prevails. Let

the bulbs be firft divefted of all adhering earth, loofe fkins, and the groffest parts of the leaves and neck, rejecting all infectious and bruifed ones; and carry them into any dry upper room out of the damp, fpreading them on the floor not more than a foot thick, but if room to lay them thinner, it will be an advantage.

Being now housed, the closer the room is kept the better, observing to turn them over once in three weeks, and clear out fuch as have any tendency to infection, which they would foon communicate to others in their neighbourhood, and it would become

general.

In the culture of onions it often happens that, through badness of feed, many are disappointed of a crop, by waiting long in expectation of the plants rifing, till it has been too late to fow again. In this recourse may be had to transplantation from other gardens, either from a neighbouring one, where there are superfluous crops, or may purchase a bed, or such part of one as is necessary from a market gardener; this should be done in May, or early in June, and if possible in moift weather: having a foot of well-dunged ground prepared, take up the plants with good roots, and plant them in rows fix inches distance, and four inches afunder in each tow, giving directly a hearty watering.

Repeat the waterings occasionally

for a week or fortnight, and the plants will grow freely, and you will not be disappointed; they will form hand-

fome hulbs.

Onions for pickling are in great re-Those proper for that purpose mould not be bigger than common round buttons; to procure which in due quantity, some seed should be sown late in a fpot of light poor land; about the middle of April is the proper time; fow it moderately thick, and the plants need not to be thinned, except they rife in very thick clusters. They will bulb in June and July, and be fit to take up in August.

Right pickling onions fell well in the markets; those that are cleaned and trimmed ready for the pickling tub fetch from eight to twelve shillings per

In the fpring many of the keeping

enions will unavoidably grow as they lie earth over them; meafure off two feet. in the house, these may be planted out in rows six inches distance, and will serve to draw up by way of escallions.

Of the Autumn or Michaelmas crop. This crop is generally fown in August, and the plants arise before Michaelmas, stand the winter, and are intended principally for fpring fervice, to draw up for young fallads, &c. and likewife, if the Strafburgh or any other variety of the common onion are fown, they, if permitted to stand, will bulb to a tolerable fize in June, and fupply the kitchen or market as headed onions till those of the spring crop are bulb

But as the common onion is liable to be cut off in severe winters, it is neceffary always at the fame time to fow fome beds of Welch onions, which bid defiance to the most rigorous frost.

We observed above, that August is the feafon for fowing thefe crops; it is to be remarked, that in warm rich land, from the fifteenth to the twentyfifth is the proper period; but in cold or poor ground, always fow in the first or second week of that month, obserwing to fow them in beds four feet wide, with twelve-inch alleys between; do not spare seed, and tread and rake it in as directed in the spring crop.

The plants will appear in a fortnight, and with them numerous weeds, to which early attention must be had to clear them out by hand before they begin to spread, but the plants of this grop are not now to be thinned.

In November and December however, if they fland very thick, fome of the largest may be thinned out occasionally for ufe.

Of faving feed of this species

February is the proper time to plant onions for feed, though this is often done in October by those that fave great quantities for fale,

For this purpose make choice of a due quantity of the largest and handfomest bulbs, rejecting all blemished ones, and fuch as have already made any effort to grow, and having made choice of a spot of ground well exposed to the fun, which being dug, proceed to plant the onions; frain a line, and with a hoe or spade open three drills, twelve inches afunder, and fix deep, place the bulbs therein nine inches diffance, and rake the for an alley, and in that manner proceed to the end; the wide spaces of two feet is by way of alleys to go between to hoe and clear off weeds, as well as to fake and support the falks of the plants when necessary.

In June the flower fialks will be fhot their full height, and the flower heads will be formed at top, to fecure which in erect polition, drive fome flout stakes in the ground along each row, at two yards distance, and from flake to flake faften double lines of pack-thread, and if thefe are tied together in the intervals between the stems of each plant, it will effectually fecure them.

About the latter end of August the feed will be ripe, which is very difcoverable by the capfules opening, and black colour of the feed; out the heads in a dry day, and spread them upon cloths in the fun, but remove them under cover at night; and in a week or fortnight beat or rob out th feed; clean it out from the rubbish, and put it up in bags for ufe.

Good onion feed is a very material article to be attended to : it is to be remarked that this feed never germinates freely after the first year, but notwithstanding this, seeds-men are very apt to mix more than half old feed with their new, to the great lofs and disappointment of many; to try its goodness, some, before they venture their general crop, fow a little in a pot, and place it in a moderate hor-bed, or near a fire : but the most expeditious method is this; tye about a thimble full of the feed loofely in a piece of linen rag, and put it into a veffel, of boiling water, suspended by a thread; in ten or fifteen miutes pull it out, and if the fends are good, they will in that fort space of time be germinated or chipped, perhaps a quarter of an inch in length.

Leek, & other feed of fimilar nature, may be tried by the same experiment.

Welch ONIONS. A fort of onions propagated by gardeners for the use of the table in spring; they never make any bulb, and are therefore only to be eaten green with fallads.

They are propagated by fowing their feeds towards the end of July, in beds of a dry but rich foil; and in three

weeks

weeks after fowing they will appear? above ground; when they must be kept very free from weeds. About October all their leaves die away which has occasioned some to think all the plantation loft, and to dig up the ground for some other use; but if they are suffered to stand, they will shoot up again very strong in January, and from that time will grow very vigo-roufly, refift all weathers, and be fit to draw in March, when they will be externely green and fine. They are much ftronger than any other fort of onions, and have much of the tafte of garlic

Sea ONION. See SQUILE.

OPIUM. In the materia medica, is an inspissated juice, partly of the refinous, and partly of the gummy kind, brought to us in cakes from eight ounces to a pound weight. It is very heavy, of a dense texture, and not perfectly dry; but in general, eafily receives an impression from the singer: its colour is a brownish yellow, so very dark and dufky that at first fight it appears black: it has a dead and faint-fmell, and its tafte is very bitter and acrid. It is to be chosen moderately firm, and not too foft; its smell and tafte should be very strong, and care is to be taken that there is no dirty or

stony matter in it.

Opium is the juice of the papaver album, or white poppy, with which the fields of Afia Minor are in many places fown, as ours are with corn. When the heads are near ripening, they wound them with an instrument that has five edges, which on being fluck into the head makes at once five long cuts in it; and from these wounds the opium flows, and is next day taken off by a person who goes round the field, and put up in a veffel, which he carries fastened to his girdle : at the fame time that this opium is collected, the opposite fide of the poppy head is wounded, and the opium collected from it the next day. They diftinguish however the produce of the first wounds from that of the succeeding ones, for the first juice afforded by the plant is greatly superior to what is obtained afterwards. After they have collected the opium, they moisten it with a fmall quantity of water or honey, and work it a long time upon a flat, hard,

and fmooth board, with a thick and ftrong inftrument of the fame wood, till it becomes of the confidence of pitch; and then work it up with their hands, and form it into cakes or rolls

for fale.

Opium at prefent is in great efteem, and is of one of the most valuable of all the simple medicines: applied ex-ternally it is emollient, relaxing and discutient, and greatly promotes suppuration; if long kept upon the kin it takes off the hair, and always occasions an itching in it; fornetimes it exulce-rates it, and raises little bliffers if applied to a tender part. Sometimes, on external application, it allays pain, and even occasions sleeps but it must by no means be applied to the head, efpecially to the futures of the fkull, for it has been known to have the most terrible effects in this application, and even to bring on death itfelf.

Opium taken internally, removes melancholy, eafes pain and disposes to fleep; in many cafes removes hæmorrhages, provokes fweating, and is a provocation to venery; and in general has a greater effect on women and children than on men. A moderate dose is commonly under a grain, though according to the circumstances two grains, or even three may be within the limits of this denomination; but custom will make people bear a dram or more, tho' in this case nature is vitiated, and nothing is to be hence judged in regard to others. If given diffolved, it operates in half an hour; if in a folid form, as in pills, or the like, it is fometimes an hour and a half. Its first effect, in this case, is the making the patient cheerful, as if he had drank moderately of wine, and at the same time bold and above the fear of danger; for which reason the Turks always take it when they are going to battle. A very immoderate dose brings on a fort of drunkenness, much like that occasioned by an immoderate quantity of strong liquors; cheerfulness and loud laughter at first, then a relaxation of limbs, a lofs of memory, and lightheadedness; then vertigoes, dimness of the eyes, with a laxity of the cornea and a dilatation of the pupils, a flowness of the pulse, redness of the face, relaxation of the under jaws, swelling of the lips, difficulty

ficulty of breathing, painful crection and constantly sheared to keep thick's of the penis, convultions, cold fweats. and, finally, death. Those who escape are usually relieved by a great number of stools, or profuse sweats. People who have gradually accustomed themfelves to an immoderate use of opium, are subject to relaxations and weaknesses, of all the parts of the body: they are apt to be faint, idle, and thoughtless; and are generally in a ftupid and uncomfortable state, except just after they have taken a fresh dose; in thort, they lofe their appetite, and grow old before their time.

Prepared opium, commonly called extract of opium, is made by diffetving opium in a fufficient quantity of water with a gentle heat; then ftraining the folution from the fæces, and evaporating it to the confistence of honey. Tincture of opium, or liquid laudanum, otherwise called the thebaic tincture, is made as follows: take of prepared opium two ounces; of cinnamon and cloves, each one drachm; of white-wine, one pint : infufe them a week without heat, and then filtre it through paper. Quincy observes of this preparation, that the addition of the fpices are of no use.

OPODELDOC. A liniment in much efteem for sprains, &c. it is thus made:

Take spirit of rosemary one pint, Soft foap three ounces, visi ni

Camphor one ounce. The College of London direct hard foap, but foft foap is most generally wfed.

ORACH, [Atriplex.] Arrach, The fpecies are, I. Pale green, or white garden orach, 2. Broad-leaved, or thrubby orach. 3. Shrubby fea orach. There are feveral other species, some of which grow naturally in England, but as they are plants of no beauty, they are rarely admitted into gardens.

The first of these plants was formerly cultivated in the kitchen-garden as a culinary herb, being ufed as fpinach, and is now by fome persons preferred to it, though in general it is not esteemed amongst the English; but the French at present cultivate this plant for use, as the people in the northern parts of England alfo do.

The fecond fort was formerly cultivated in gardens as a shrub, and by some persons were formed into hedges,

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but this plant is by no means fit for fuch purposes on many accounts, for it grows too vigorous; the shoots in one month at the growing feafon of the year will be two feet long, provided they have a good foil, fo that a hedge of this plant cannot be kept in tolera ble order, nor will it ever form a thick hedge. But a worse inconvenience attends this plant, for in very hard winters it is often destroyed.

It may be propagated by cuttings, which may be planted in any of the fummer months on a flady border; they will foon take root, and be fit to transplant the Michaelmas following, when they fhould be planted where

they are to remain.

base sained at

The third fort grows wild in divers parts of England, on the fea-fide, from whence the plants may be procured; or it may be propagated by cuttings in the fame manner as the former fort. This is a low under farub, feldom rl-fing above two feet and a half, or at most three feet high, but becomes very bushy. This may have a place amongst other low fhrubs, and if planted on a poor gravelly foil, will abide feveral

years, and make pretty diversity.

ORANGE TREE, [Aurantium.]
The species are, the Seville Orange, the China Orange, the Shaddock, or Pumplemoes, the Horned Orange, the Hermaphrodite Orange, the Willow Leaved, and the Dwarf or Nutmeg

There are many more less material varieties than are here noticed, in the countries where they grow in the open ground; and the varieties, like our apples and pears, may be multiplied by feed without end : but, like other fruit fo raised, it is probable there may not be one in a hundred worth notice, fo that the approved forts can only be continued with certainty by budding.

The flowers of all the species and varieties are formed each of five fpreading petals; appearing here principally in May or June, and the fruit continue fetting in June and July, and ripen the

year following.

All the forts are elegant evergreens of the tree kind, obtaining in England from about five to eight or ten feet stature, forming full and handforme heads, closely garnished with beautiful large leaves the year round, and a pro-

fusion of sweet flowers, in spring and early in fummer, which, even in this country, are often fucceeded by abundance of fruit, fametimes arriving to tolerable perfection; but the chief merit of these trees in England is for ornament, which confifts not only in their beautiful foliage, but also in the flowers and fruit, and have this peculiar merit, as to exhibit bloffoms, green fruit in different stages of growth, and full grown ripe yellow fruit, all at the fame time; which; together with their large thining green leaves, effect one of the most beautiful contrasts of our gardens, which renders all the forts very defirable furniture for the greenhouse collection. Oranges and lemons are generally more fruitful in England than the citron, and the Seville orange most of all; which is the only fort of orange to be depended on for any confiderable quantity of flowers and fruit; this tree being hardieft, retains its fruit in winter better than most of the other varieties.

These trees are all natives originally of India, but have been long retained in our gardens as green-house plants; and in the southern parts of Europe, as Portugal, Spain, and Italy, they grow in the open ground like our apple and pear trees, and from which countries wast quantities of the fruit are imported hither annually; but in England the trees must always be continued in pots or tubs, to be housed in winter.

They all succeed in the open air from the beginning of June unto the middle or latter end of October, and the rest of the year must have the shelter of a green-house, and they will prosper in any good garden mould.

They are propagated by feed, budding, and inarching. By feed, i. e. the kernels of the fruit: this method of raifing these trees is rarely practised in England, except for stocks, on which to bud the different kinds; for although raising the trees entirely from seed, without budding, is the way to gain new varieties, yet out of numbers for raised, it is probable not a tree of them may produce fruit that possesses any good property, but will be small, crablike, and intolerably sour and harsh: but when any new valuable variety is by this means accidentally

obtained, it is continued and multiplied by budding it upon stocks raised from the kernels of any of the forts; by which practice all the above described varieties are annually increased in our gardens. The method of raising them entirely from feeds, except for stocks, is both tedious and uncertain; therefore in this country it is searce worth practising, unless a few merely for curiosity.

The raifing them, however, from the kernel, either to form trees for new varieties, or for stocks to bud upon, is in this country performed effectually and expeditiously by the aid of a hotbed, and by this means stocks may be obtained of due fize for budding, in two years. The following is the method of raifing them.

in two years. The following is the method of raifing them:

Early in fpring procure fome kernels
which may be had plentifully from

which may be had plentifully from rotten fruits, or others that are perfeetly ripened, observing, that for stocks, the citron, lemon, and Seville orange, as being the freeft shooters, are to be preferred, though the citron is the Arongest shooter of the three: fow the kernels in March, in pots of rich light earth half an inch deep, and plunge them in a hot-bed of dung or tan, under frame and glasses, giving them air, and frequent fprinklings of water. In two or three weeks the plants will come up, and in fix weeks or two months more, they will be advanced four or five inches in height; observing, in the middle or latter end of June, to harden them to the full air, in which let them remain till October, then move them into the green-house to stand till fpring In March or April, proceed to plant them fingly in small pots, being careful to shake them out of the feedpot with their roots entire, and having half filled the other pots with light, rich, loamy compost, place one plant in each pot, filling it up over the roots with the fame fort of earth, and let them be directly watered, repeating it occasionally till they are fresh rooted; afterwards treat them as other woody exotics of the green-house, and in a year or two, the largest of those defigned for flocks will be fit to bud.

But, to have flocks as forward and fine as poffible for budding, as foon as they are potted out as above, plunge them directly in a hot bed, under a frame and glaffes, about three or four months, which will draw them up in height with handsome flems.

A bark-bed would be the most eligible, made either in a glass pit, or to be covered with a deep frame and lights; fo plunging the pots to their rims in the bed, giving occasional shade in the middle of hot sunny days, and fresh air daily by tilting one end of the lights more or less, as you shall judge expedient : likewise refresh them frequently with water, and by the middle or end of July the plants will be advanced fifteen or eighteen inches, or near two feet high, observing then to harden them by degrees to the full air for the remainder of the fummer; and by being thus forwarded, those defigned for flocks will be in excellent order for budding the year following.

But these feedlings may still be more forwarded, and a year or two's growth may be gained by forcing them, as above, the first season. This is effected by pricking out the feedlings the first year they come up, when two or three inches high, in small pots, as above, to be plunged either in a bark-bed, or even in a dung hot-bed, covered with old tan eight or ten inches deep for the reception of the pots. The plants are then to be potted fingly, and plunged in the hot-bed, and by the middle or end of July, they will have advanced to twelve or fifteen inches, or perhaps to a foot and a half, or near two feet in height; they must then be gradually hardened to the full air, by raising the lights more and more every day, leaving them also up on nights, and at last take them quite off in a cloudy calm day. Let the plants remain fully exposed till October, then move them into the green-house for the winter, and many of them will be in due order to receive the buds the next Auguft; and the following is the method:

The operation of budding is performed in August upon stocks of their own kinds, for all the species and varieties of this genus take freely upon one another, and the budding or inoculation is performed in the common

As to the buds for hudding them, observe to procure cuttings only from bearing free-shooting trees; of the forts you would encrease; young shoots, that are round and plump, must be

chosen, and from these take the bude in the usual manner, being careful to insert them in a smooth part of the stock, at about fix to ten or fifteen inches from the bottom, one bud in each stock, tying them with a ligature of base.

As foon as the budding is finished, it is proper to place the plants in their pots in the green-house, or in a glasscase, &c. to defend the buds from wet and drying winds, turning the budded part from the fune or where there is the convenience of a spare bark-pit, where the head of the bark is almost exhausted, the pots may be plunged therein two or three weeks, and it will more effectually promote the union of the buds; observing, in either department, to admit air freely, by opening the front glaffes, and allowing a flight shade of mats in the middle of scorch ingfunny days: the pots thould also be supplied with water every day or two during the hot weather. In three or four weeks the buds will be united with the stocks, when it is proper to loosen the bandage of each bud, that they may have room to swell; observing, however, that the buds will all remain dormant till fpring.

After this there is nothing more required this year but due waterings, only observing, that in case of great rains, it will be proper to retain the plants in the green house for the remainder of the summer, and until next

fpring.
In March following, the heads of all the flocks must be cut off flanting close behind the infertion of the bud; after this operation the buds will food be to fpring, and produce each one this which probably will obtain from about five or fix, to eight or ten inches in length the same year. It is proper to observe, that if the stocks could have the aid of a bark-bed, there will be a chance of having the buds thoot a foot and half, or more, by the end of funrmer; therefore where there is the convenience of a bark pit, or glass-cafe or any deep frame, that can be placed on a bark-bed, &c. we should advise by all means to make use of such conve niencies for forwarding the first shoot of the buds; fo that as foon as the flocks are headed, as above directed, plunge the pots in the hot-bed, and let them enjoy the benefit of air and wa-

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ter, in proportion to the temperature of the bed and weather; likewife occasional shade when the sun is very powerful. Here they may be continued, with the above care, till the end of July, when some of the strongest shooters will be advanced near two feet high; and it is then proper to begin to inure them by degrees to the full air, to harden them against winter, that they may be able to live during that season in the green-house, to which they must be removed in October.

When it is however defigned to propagate by inarching, stocks must be raised from seed, as before directed, which, when of due size, are to be placed in their pots, upon a fort of stage, or some erection convenient to the head of the trees you intend to inarch from, observing to fix upon some convenient young shoots, nearly the size of the stocks, forthe purpose of inarching; these are to be inarched in the stocks, as they grow on the trees, in April or May, one in each stock, and by the end of August following they will be united to the stock, and may be separated from the parent tree.

But this method of propagating these trees, is rather practised by way of curiosity, to raise a sew trees to a bearing state in haste, because, by inarching a young bearing branch, furnished with fruit, into any of their own stocks, in April or May, it will frequently be united by the following August, and the branch spinarched may be separated from its parent plant, and, being sirrnly attached to the stock, it then commenses a new tree, bearing fruit, raised in the short space of sour or sive months.

By the same rule you may inarch an orange, into the branch of a citron or lemon, or all three upon the same tree,

for the fake of variety.

But trees raised by this method never grow so large nor handsome as

those raised by budding.

The flowers are highly odoriferous, and have been for some time past of great esteem as a persume: their taste is somewhat warm, accompanied with a degree of bitterness. They yield their slavour by insusion, to rectified spirit, and in distillation both to spirit and water: the bitter matter is dissolved by water, and, on evaporating the decoction, remains entire in the extract. The distilled water was for-

merly kept in the shops, but on account of the scarcity of the slowers is now laid aside: it is called by foreign writers aqua nephæ. An oil distilled from these slowers is brought from Italy under the name of oleum or effentia neroli.

The outer yellow rind of the fruit is a grateful aromatic bitter, and, in cold phiegmatic conflitutions, proves an excellent flomachic and carminative, promoting appetite, warming the habit, and strengthening the tone of the viscera. Orange peel appears to be very confiderably warmer than that of lemons, and to abound more with effential oil: to this circumstance therefore due regard ought to be had in the use of these medicines, The flavour of the first is likewise supposed to be less perishable than that of the other, hence the College employ orange peel in the spirituous bitter tincture, which is designed for keeping, whish in the bitter watery infusion, lemon peel is preferred. A fyrup and two diffilled waters are for the fame reason prepared from the rind of oranges in preference to that of lemons.

The juice of oranges is a grateful acid liquor, of confiderable use in febrile or inflammatory distempers, for allaying heat, abating exorbitant commotions of the blood, quenching thirst, and promoting the salutary excretions; it is likewise of great use in scurvies, especially when given in conjunction with the cochlearia, nasturtium, or other aerid antiscorbutics, as in the succi score

butici of the shops.

ORANGE MINT, [Mentha Rubra.]
A species of mint smelling like an

orange.

Mock ORANGE. See Mock ORANGE.

ORCHARD. A garden department, configned entirely to the growth of standard fruit trees, for surnishing a large supply of the most useful kinds

of fruit,

In the orchard you may have as ftandards all forts of apple trees, most forts of pears and plumbs, and all forts of cherries; which four species are the capital orchard fruits: each of which comprise numerous valuable varieties; but to have a compleat orchard, you may also have quinces, medlars, mulberries, service-trees, filberts, Spanish nuts, barberries; likewise walnuts and chesnuts, which two latter are particularly applicable for the boundaries of orchards.

orchards, to screen the other trees from the infults of impetuous winds and cold blafts. All these trees should be arranged in rows from twenty to thirty feet diftance.

But fometimes orchards confift entirely of apple-trees, particularly in the eyder-making countries, where they are cultivated in very great quantities in large fields, and in hedge-rows, for the fruit to make cyder for public supply.

And fometimes whole orchards very considerable extent are entirely of cherry-trees; but in this case, it is when the fruit is defigned for fale in fome great city, as London, &c. for the Supply of which city, great numbers of cherry-orchards are in some of the adjacent counties, but more particularly in Kent, which is famous for very extensive cherry-orchards; many of which are entirely of that fort called Kentish cherry, as being generally a great bearer; others are stored with all the principal forts of cultivated cherries, from the earlieft to the lateft kinds.

A general orchard, however, com-poled of all the before-mentioned fruittrees, should confift of a double portion of apple-trees or more, because they are confiderably the most useful fruit, and may be continued for use the

year round.

The utility of a general orchard, both for private ufe and for profit, flored with various forts of fruit-trees, must be very great, as well as afford infinite pleasure from the delightful appearance it makes from early fpring till late in autumn : in fpring the various trees in bloffom are highly ornamental; in fummer, the pleasure is heightened by observing the various froits advancing to perfection; and as the feafon advances, the mature growth of the various forts arriving to perfec-tion in regular succession from May or June until the end of October, must afford exceeding delight, as well as great profit.

As to the proper extent of ground for an orchard, this must be propor-tioned, in some measure, to the extent of land you have to work on, and the quantity of fruit required either for private use, or for public supply: fo acre to twenty or more in extent.

With respect to the fituation and afpect for an orchard, we may observe

very thriving orchards both in low and high fituations, and on declivities and plains, in various aspects or exposures, provided the natural foil is good. We should, however, avoid very low damp fituations as much as the nature of the place will admit; for in very wet foils no fruit-trees will profper, nor the fruit be fine: but a moderately low fituation, free from copious wet, may be more eligible than an elevated ground, as being lefs exposed to tem-pestuous winds; though a situation having a small declivity is very desirable, especially if its aspect incline to-wards the east, south-east, or southerly, which are rather more eligible than a westerly aspect; but a north aswhich are rather more eligible pect is the worst of all for an orchard. unless particularly compensated by the peculiar temperament or good quality of the foil, We would remark, for the advantage of those that are not accommodated with choice of fituation and aspect, that they need not be under any great anxiety, if the foil is but fuitable; only observing, if possible, to abandon very low damp situations, for the reafon before given them.

As for foil, any common field or pasture that produces good crops of corn, grass, or kitchen garden vegeta-bles; is sutlable for an orchard; if it should prove of a loamy nature, it will be a particular advantage: any foil however, of a good quality, not too light and dry, or too heavy, stubborn, or wet, but of a medium nature, of a foft pliant temperature, not less than one spade deep of good staple, will be

proper for this purpose.

Where, however, the foil is naturally desective, the desects must be rectified as well as possible, by the approximation of the property of the prop plication of proper manures and com posts, and applied either to the whole ground, if but of moderate extent, or to the places where each tree is to ftand, for a space of eight or ten feet circumference, working it up with the natural foil of the place

This application, in extensive or-chards, would be a very chargeable operation; therefore those who are at liberty to chufe, should have particular regard to the fixing upon a proper spot, where but little or no foreign aid is requisite.

The preparation of the ground for the reception of the trees, is by trenching, or if for very confiderable orchards, by deep ploughing; but trenchdigging, one or two spades, as the soil
will admit, is the most eligible, either
wholly, or only for the present, in the
places where the lines of trees are to
stand, a space of fix or eight feet wide,
all the way in each row, especially if it
be grass-ground, and intended to be
kept in sward; or if any under-crops
are designed to be raised, the ground
may be wholly trenched at first; but as
to this you may suit your convenience,
observing in either case to trench the
ground in the usual way to the depth
of the natural soil; and if in grass, turn
the sward clean to the bottom of each
trench, which when rotted, will prove
an excellent manure.

In planting orchards, however, on grafs ground, fome only dig pits for each tree, capacious enough for the reception of the roots, loofening the bottom well, without the labour of digging any other part of the ground: where the ground, however, is trenched either wholly, or fome confiderable width along the place of each row of trees, it will confequently prove of greater advantage in promoting their

free growth.

The ground must be fenced securely against cattle, &c. either with a good ditch and hedge, or with a paling sence,

as may be most convenient.

The best season for planting all the forts of fruit trees is autumn, soon after the sail of the leaf, from about the latter end of October until December; or it may be performed any time in open weather from October until March.

All the forts of fruit trees proper for this department, if not furnished with them in your own nursery, may be had very reasonable at all the public nursery-grounds; observing to chuse them principally full standards, with strait clean stems, fix seet high, especially the apples, pears, plumbs, cherries, and other tree kinds, each with a branchy well-formed head, of from two or three to four or sive years growth; and let several varieties of each particular species be chosen, that spen their fruit at different times, from the earliest to the latest, according to the nature of the different forts, that there may be a sufficient supply of every fort regularly during their proper season; and of ap-

ples and pears in particular, chufe a much greater quantity of the autumnal and late ripening kinds, than the early forts; but the most of all of apples; for the summer-ripening fruit is but of short duration, being only proper for temporary service. The later ripening kinds keep sound some considerable time for autumnal use; and the latest forts that ripen in October continue in perfection for various uses all winter, and several sorts until the season of apples come again.

Having made choice of the proper forts, and marked them, let them be taken up with the utmost care, so as to preserve all their roots as entire as possible; and when taken up, prune off any broken or bruised parts of the roots, and just tip the ends of the principal roots in general with the knife, on the under side, with a kind of sope out-

ward.

If the trees have been already headed, or fo trained as to have branched out into regular fhoots to form each a proper head, they must be planted with the said heads entire, only retrenching or shortening any irregular or ill-placed shoots that take an aukward direction, or run longer than the rest.

The arrangement of the trees in the orchard must be in rows, each kind separate, at distances according to the nature of growth of the different sorts; but for the larger growing kinds, such as apples, pears, plumbs, cherries, &c. they should stand from twenty-five to thirty or forty seet every way asunder, though twenty-five or thirty seet at most is a reasonable distance for all these kinds.

Each species and its varieties should generally be in rows by themselves, the best to suit their respective modes of growth: though for variety you may have some rows of apples and pears ranged alternately; likewise plumbs and cherries; and towards the boundaries may have ranges of lesser growth, as quinces, mediars, filberts, &c. and the outer row of all may be walnut-trees, and some chesnuts, set pretty close, to defend the other trees from violent winds.

from violent winds.

Proceed to flake out the ground according to the above diffances, for making the holes for the reception of the trees; which if made to range every way, will have a very agreeable effect,

and admit the currency of air, and the influence of the fun, more effectually.

In planting very extensive orchards, some divide the ground into large squares or quarters of different dimensions, with intervals of fifty seet wide between, serving both as walks, and for admitting the air. In different quarters plant different forts of fruit, as apples in one, pears in another, and plumbs and cherries in others, &c. and thus it may be repeated to as many quarters, for each species and its varieties, as may be convenient.

A wide hole must be dug for each tree, capacious enough to receive all the roots freely every way with-out touching the fides. When the holes are ready, proceed to planting, one tree to each hole, a person holding the stem erect, whilst another trims in the earth, previously breaking it small, and cast it in equally about all the roots, frequently shaking the tree to cause the mould to settle in close about all the smaller roots and fibres, and so as to raise the tree gradually up, that the crown of the roots may be but two or three inches below the general fur-face; and when the hole is filled up, tread it gently, first round the outside, then near the stem of the tree, forming the furface a little hollow: and then if on the top of all Is laid fome inverted turf to the width of the holes, forming it with a fort of circular bank, three or four inches high, it will support the tree, and guard the roots from drying winds and the fummer's drought: obferving that each tree stands perfectly upright, and that they range exactly in their proper rows.

If the orchard is much exposed to the winds, it may be proper to ftake the new-planted trees to support them in their proper position, and secure them from being rocked to and fro by the wind, which would greatly retard their rooting afresh; placing one or two firong tall stakes to each tree; but the most effectual method is to have three stakes to each, placed in a triangle, meeting at top near the head of the tree, wrapping a hay-band round that part of the stem, to prevent its being barked by the flakes or tying; then tie the stakes at top close to the tree, with some proper bandage, bringing it close about the stem and stakes together, over the hay-wrapping, in a proper manner to secure the tree firmly in an erect posture.

The ground of the orchard, between the rows of trees, is very commonly laid down in grafs, as being the most convenient for admitting of coming readily at the trees at all times to ga-ther the fruit: but if thought proper, it may be employed for some years either wholly, or in part, for the produce of kitchen vegetables, or for the growth of corn, turnips, potatoes, &c. being careful in digging or ploughing the ground for the reception of these crops, not to go too near to diffurb the roots of the trees; likewife not have any firong-growing plants within three feet of each fide of the rows of trees: however, after the trees are advanced in growth, and begin to bear any thing confiderably, it may be more eligible to lay the ground down intirely in grafs, as it will be then more in character of an orchard, and be more convenient for gathering the fruit, and doing any necessary work to the trees; but in any of these ways, every one may fuit their inclination or convenience,

If, however, it is laid down in grafs, no cattle should be turned in to graze at large, unless the stems of each tree be previously well secured with posts and railing, and wattled with thorn-bushes, especially in young orchards, otherwise they will bark the trees, to their very great injury; nor should large cattle be turned into orchards, where the branches of the trees are low and within their reach.

With regard to the general culture of orchard fruit-trees, observe, that as being standards, their heads should generally be permitted to branch out nearly in their own natural manner, with the branches at full length, without shortening, only on particular occasions, and they will gradually form themselves into large branchy heads, and all the branches foon affume a bearing state; very little pruning of any fort being required to standard fruit-trees, except in particular cases, as above hinted, of superfluous or very irregular growths: as for example, all fuckers arifing from the root, must constantly be taken off close; likewise divest the stems of all side-branches coming out below the head; and all luxuriant shoots arifing in the heart or middle of the tree, or in any part where

they appear too much crouded, should be pruned off close. If any particular branch of the head should become of long straggling growth, extending beyond all the rest, it may be shortened as you shall see proper, down to some young shoot, or lower branch it supports, that is of a regular growth, or intirely retrenched as it may seem proper to keep up some uniformity in the head; and if the head in general become at any time over-crouded with branches, thin out the worst and most irregular growers of the superfluity. All dead wood and cankered parts should also be cut off to the live wood.

But remarking, that except in the above cases, the branches in general of flandard fruit trees, in every flage of growth, should be fuffered to shoot forth, both in length and branch, laterally in their own way; for as most of the forts first form their fruit-buds, or fours, near the extremity of the branches or shoots, if pruning their ends were practifed, it would not only be cutting off the parts where the fruit would have been produced, but would force out a number of lateral uteless shoots, and crowd the tree with superfluous or unnecessary wood, and greatly retard the branches from forming the above fruit-fpurs or buds for bearing; and unless these are formed in plenty; none of the principal tree kinds can ever produce any tolerable crops of fruit; but the trees being suffered to take their natural growth, according to the above rules, all the branches and moots will gradually form fruit-spurs towards their extreme parts, at almost every eye or bud.

By the above hints it is obvious that flandard fruit-trees require but very little culture in respect to pruning; and the less they are pruned, except in the before-mentioned cases, the better

they will bear.

Befides, to attempt at any regular pruning of orchard or other standard fruit-trees, would prove a very tedious

as well as unnecessary work.

When necessary, however, to prune any of these trees occasionally in the above cases, observe that the proper season for that work is any time from the sall of the leas until March. Like wise observe in performing that operation, that such branches as require retrenching should be cut off quite

close either to their origin, if necessary, or close to any more convenient branch it may support, not leaving any stump, and make the cut as even and smooth

as posible

Orchard-trees are fometimes greatly infested with moss growing all over their branches, but more particularly those trees, which are situated in very damp foils; also often in old orchards where the trees stand so close as to croud one another so considerably as to exclude the free air : in which cafe of moffinels, the trees commonly affume a stunted unkindly growth, producing but indifferent crops, and the fruit often small and ill-flavoured, The only remedy for this disafter, is, to thin out fome of the branches where thickest, to admit the fun and air more freely, and fcrape the mos off from the remainder, with an infrument directed below; but where the trees thus infested stand very close to one another, some of them should be cut down to admit a larger portion of air, and the fun's heat and light; and for the same reason thin the branches of the remaining trees; then clear the branches in general from the groffest of the moss; for which pur-pose you should be provided with some iron fcrapers hollowed on the edge, and of three different fizes to fuit the different branches, having the edges a little blunted; and with these tools scrape off the moss from all the principal branches at least, and of as many of the smaller ones as your time will permit, for it is tedious work where there are many trees: after this, if the ground of the orchard, either wholly or but ten or twelve feet width along each row of trees, be dug or deeply ploughed, it will give new vigour to the roots, and which together with the thinning of the trees to admit the funand air freely, and the principal branches being diverted of the mois, you will find them shoot at top with fresh vigour, and the quantity, fize, and quality of the fruit be greatly augmented in a year or two.

ORCHARD-GRASS. The name of a fmall, coarse, but very sweet grass. It is of very quick growth, and may possibly hereaster be cultivated to ad-

vantage.

ORE-WEED. A general name for weeds growing at the bottom of the

fea, and also on the muddy and rocky parts of the shore.

Sea-weeds are fo beneficial a manure, that farmers ought not to grudge the expence of carrying them a few miles, In Devonshire, Cornwall, and other maritime parts of England, these weeds are laid in heaps till they are rotten, and then spread upon the land, about a load to three rods : but this lasts only one year, unless sand, or a stiff earth, according to the quality of the foil in-tended to be improved, be laid on or mixed with them; and then they become a lasting manure. In some places, these weeds are gathered in heaps, and burnt as foon as they are dry; after which about a bushel of their ashes is laid on upon three rods of ground. But these, like all other ashes, should be mixed with fand, or stiff earth, if you will have the land last good : otherwife they are only an improvement for a year. These ashes are particularly good for grass grounds over-run with moss. Loofe fandy foils are likewise peculiarly benefitted by this weed: but, being a sub-marine plant, the wind an fun soon exhale its moisture; so that the more speedily it is taken from the shore, where storms often throw it up in great quantities, the better it is. When spread on the ground, and afterwards covered over, it foon diffolves into a falt oily flime, proper to fertilize and bind light foils. This is the most approved way of applying it: though fome lay it naked, and fresh from the sea, upon their barley lands, towards the end of March and beginning of April, and have a good crop of corn: but such quantities of rank weeds are apt to shoot up afterwards, that no wholesome plant is to be expected that year.

ORCHIS, See DOGSTONES.
ORIGANY, [Origanum.] Wild Thyme, or Wild Majoram. This is met with upon dry chalky hills, and in gravelly foils, in feveral parts of England. It has an agreeable smell, and a pungent taste, warmer than that of the garden marjoram, and much resembling thyme, which it seems to agree with in virtue. An effential oil distilled from it, is kept in the shops.

ORPINE, [Telephium.] This is a very thick-leaved juicy plant, not unlike the houseleeks. It has a mucilaginous roughest taste, and hence is re-Vol. II. commended as emollient and aftringent, but has never been much regarded in practice.

Bastard ORPINE. See BASTARD

ORRIS, [Iris.] The roots of this plant, when recent, have a bitter, but acrid, naufeous tafte, and taken into the body proves strongly cathartic; and hence the juice is recommended in dropfies, in the dose of three or four scruples. By drying they lose this quality, yet still retain a somewhat pungent, bitterish taste: their smell in this state is of the aromatic kind; those produced in the warmer climates have a very grateful slavour, approaching to that of March violets: hence the use of the Florentine iris in persumes, and for slavouring liquors: the shops employ it in the white pectoral traches, &c.

OSIER, [Salix.] A fmall kind of willow; which from the patricular uses for which it is raised, requires a different fort of management, and another manner of planting.

The ofier very much refembles the willow in its appearance, but that is a smaller tree, its shoots are longer and stenderer, and its leaves also much longer; these are very narrow, and in the best kind are green on the upper side, but whitish, as it were, woolly underneath.

The offer loves a wet and low ground near waters, and nearly upon a level with the water. It thrives no where fo well as in marshy places, near the edges of large rivers; or in those little islands that are formed by the breaking of their current; and every way surrounded by the water. The ground for an ozier bed should be a rich black mould; and this is very common in these low and wet situations.

The defign in planting the ofier is, that it may shoot out a great quantity of fine slender twigs, which are to be cut at a small growth. Therefore there is no occasion for a trunk either of the pollard or timber tree form. This would only exhaust a great deal of the nourishment taken in by the root, and deprive the shoots of it; neither are they so apt to rise straight and sine, unless they begin near the ground.

On this depends the peculiar way of planting the ozier. It is raifed in the fame manner as the other willows, by truncheons or stakes driven into the R ground;

ground; and it is proper always to let a certain quantity of the shoots stand for a due growth for this purpose, when the rest are cut. But as these are not to rife in a trunk, they must not be above four foot in length, and three foot of this must be thrusted into the ground.

They will, by this means, have a fine supply of roots; and beginning to shoot so near the earth, all the nourishment will be carried up into the twigs.

These stakes are to be planted at three foot distance, and they will quickly yield a large profit: the twigs rife numerous from their tops; and being cut down pretty close, in the manner, of shrowding pollard trees, they fend up a new fet of twigs again almost immediately, which quickly grow to their proper fize.

The time of cutting otiers is in September; and the advantage that may be made of planting them is very great. Many waste pieces of wet ground might be made to yield a great profit

by them.

If stakes or truncheons of a proper bigness cannot be had, more time will be required to raise the ozier bed; but it may be done from smaller fets. These are to be cut four or five foot long, and fluck at the same distances into the ground. They will grow very freely; and when they have flood three years, they are to be cut down within a foot of the ground; and from thence will rise the twigs in great abundance; and they will continue affording a supply of them many years

The finest and best kind of offer is that here described with long leaves, white underneath; but there are several others that answer the purpose very well. The twigs are of constant and ready sale. The basket-maker's work depends upon them; and there is a great confumption of them among the fishermen. The wheels, as they are called, for catching eels and other fish, are made of them: and baskets, hampers, and the like, of which the confumption is, in a manner, endlefs and unlimited.

The quick growth of the twigs is a great article in the profit of an offer holt, for they are cut every year; and the heads that bear them grow for a long time more and more bushy at every cutting. So that here is a vast profit

to be made with fcarce any expence; annually returned and increased every year; and this upon ground fit for nothing elfe; for the offer will grow and flourish on ground that is so loose and fo wet, that it would not afford hold for the root of any other kind of plantation whatfoever.

As the stems of the ofiers will decay in time, let the husbandman always take care to have a supply. Nothing is fo eafy: for 'tis only flicking into the ground some twigs between the stems, which will take their time to root themselves, and grow to a due bigness; and when properly cut, and managed according to the directions already given, of raifing an offer ground from fets, will be ready to yield their produce as the old ones begin to decay; and may thus be made to supply their place gradually as they are wanted.

OSLETS. Offets are little hard fubstances that arise among the small bones of the knee of the horse, on the inside; they grow out of the gummy substance which fastens those bones together, and derive their origin from a notter like that which produces splents, and like them proceed from the same cause, viz. the straining of a horse while he is young, and before his joints be well knit; and from hence also we may understand the nature of all those hard tumours already treated of, which grow near the joints, whether they be Spavins, Jar-dons, Curbs, or of any other kind, their chief difference confifting in their fituation, being all of them formed of a matter, which, in time, grows hard, yea, even as the bone itfelf; and this is the reason why they cannot be moved but by things that are of the greatest efficacy. Notwithstanding, if they be discovered before they acquire such a degree of hardness, they may be made to yield to less powerful remedies than what we are fometimes constrained to make use of.

OST. See OusT.

OVERFLOWING LAND. is commonly effected by diverting the streams of rivers, brooks, land-floods, or some part of them, out of their natural channel: but were the streams lie fo low as to be incapable of over-flowing the lands, they are made use of to turn such engines as may raise a quantity of water to do it.

When you have got your water up

you can bring it to, make a fmall trench to carry some of the water in, to give you the level the land, keeping of it always as much as you can upon a level, or upon the highest part of the land, fo that from the upper part you may be able to water the lower when you will, and by carrying of the level of this small trench you will be directed how to cut on your main trench, which ought to be made big enough to receive the whole stream that you raise, and to be rather broad than deep. At convenient diffances according unto the bigness of the stream, and the quantity of the land you are to water, make feveral fmall trenches, making your main trench the narrower, proportionable to the number of drains you lead from it; only you must note, that the greatest advantage of over-flowing is, where you can do it frequently, and draw it off quickly; because where water stands long on ground, especially in winter, 'tis apt to breed rushes and weeds; and therefore where any fuch inconveniency is, draw it off by small

Some graze their land till Christmas, and fome longer; but as foon as 'tis fed bare from Allhallowtide to fpring, that the grafs is not too high, is the best time for over-flowing, except it prove a dry time in April or May: If it do, it will be of mighty advantage; for in hot weather the grafs grows three times as much if moiftened, as at another time. Land-floods are best to overflow with in winter, and warm fattening fprings in fummer, only you must observe to let the water dry in before you water it again; and not to let cattle poach it, and that you water it at night fo as that the water may be gone before the heat of the day comes, which is apt to 'cocafion the fcorching of it; and to rot the roots of the grafs by lying too long on the land. The washing of high ways, towns, or streets, especially of commons, where sheep ieed, is a very great improvement of land or trees.

But in some places iffue springs whose waters are injurious to land, as such usually are that flow from coal mines, or any sulphurous mineral, because they are of such a brackish, harsh quality, that they kill vegetables, instead of nourishing of them; as too much salt, urine, or dung will do, if

to the highest part of the land that you can bring it to, make a small trench to carry some of the water in, to give you the level the land, keeping of it always as much as you can upon a level, or upon the highest part of the land, so that from the upper part you may be able to water the lower when you will, and by carrying of the level of this small trench you will be directed how to cut on your main trench,

Also some sorts of lands will not be improved by watering, except only with land floods, and in summer, when 'tis a very dry time; as your cold clay, and strong land that lies very flat; partly because of its flatness, and that water will not eafily penetrate stiff clay; and therefore light dry warm grounds are the most improved by watering.

OVER-REACH. A wound in the fore-heel of a horse, made by the point

of the hind-shoe.

When this wound is only flight or fuperficial, it is, in general, very eafily cured, by washing it clean, and applying the wound ointment: but it should be observed, from the nature and manner of the injury, where the blow has been smart, that it differs widely from a common cut; the part here being both torn and bruised, and consequently it requires to be properly digested, in order to lay a good foundation for healing.

For this purpose, after washing out any dirt or gravel with foap-fuds, &c. let the wound be digested, by dreffing it with doffils of lint dipped in an ounce of Venice turpentine, divided with the yolk of an egg, to which half an ounce of tincture of myrrh may be added; over this dreffing it would be adviseable to apply the turnip poultice, or that with strong beer grounds and oatmeal, three or four times, or oftner, till the digestion is procured, and then both thefedreffings may be changed for the precipitate medicines, or the lime-water mixture; observing always to apply the doffils carefully to the bottom, to fill up the fore with the same even to the surface, and to bind all on with a compress and roller : and if any cavities appear that cannot conveniently be dreffed to the bottom, they should always be laid open, or no proper foundation for healing can be obtained. The hoof also should be kept Supple, or paredaway, when the growth

of it interrupts this end, as is fometimes the case.

OUST. A kiln, generally applied

to that used in drying hops.

It is built with fire-places in the nature of malt-kilns; and at a proper distance over the fire is an hair-cloth strained upon laths; and thereon the hops are laid, and raked even to the depth of about fix or seven inches, for the better conveniency of drying them equally; and when they are properly cured on the under side, they are carefully turned; and by that means the upper side becoming the under, the whole shares the fire alike. The person that persons this part is called the dryer, whose business it is to manage the fires.

The fuel commonly made use of is charcoal, for its freeness from smoke, and affording a steady heat. Great nicety is required in this part; a small fire being to be made, at first, that they may heat gradually, and so raised as they dry; that it may be done without scorching; and the fire is to be lowered by degrees, against they are ready to be taken off: the time required is

about eight hours.

But as charcoal is very dear, being three or four pounds per load, many people have adopted the method of drying with fea-coal, upon what they call cockle-oufts, which are fquare iron-boxes, placed upon brick-work, and a flue and chimney in the back part of the building for the smoke to go off. The computation is, that a chaldron of fea-coal, at about twentyfour shillings, will dry a load of hops, and that a load of charcoal will do no more. It is indeed expensive to erect fuch oufts, as there must be no timber near them; and an iron-beam and ironlaths are to be used, and they covered with plates of tin or iron, properly faftened together.

A gentleman has lately claimed the merit of having invented a new method of drying hops with fea-coal, or any kind of fuel whatever, by means of a moveable iron furnace: it is in form of an horizontal cylinder, ftopped at both ends: it lies on an iron carriage, which rolls on four iron-wheels: in the fore-end of the cylinder is the furnace door, and a hollow iron flue runs in a horizontal direction along the upper furface of the cylinder from the

back, till it reaches the fore-end of ir, when it takes a vertical direction, and is carried as high as is necessary to convey the smoke out of the oust. We cannot pretend to say what are the particular advantages resulting from the use of this rolling surnace, never having seen it at work.

OUT-HOUSES. Are fuch as belong and are adjoining to dwelling-

houses.

OUTLAND. Among the Saxons, was that land that lay beyond the demesnes, and was granted out to tenants, though' at the will of the Lord, in like manner as copyhold estates.

OXEN. Oxen should be tall, full bodied, short jointed, and well put together in every part, so that one sees their strength. Their hair should be fine, and lie smooth, for that betokens

health, and a good kind.

The strength of the ox is very great, and he has patience to endure satigue, but he is slow, and must not be put beyond his natural pace. He will not work easily or freely, if this be attempted, and what is worse, fretting & hurrying throws him into distempers.

'Tis but in some particular parts of England they now breed their oxen to labour, but it is very profitable. In these places the husbandman cannot be too much warned against his hurrying them in their employments; for he should consider that they are to be fed as well as worked; and while he makes them thus liable to distempers, he takes them off from one, and makes them incapable of the other.

When oxen are to be trained to labour, they must be first put to work at three years old, but they must be brought to it gently, and, by degrees, in the manner of a young horse; for if they be pushed or worked too hard at this time, they are spoiled for ever.

Great care must be taken to match, such well as are to draw together, for otherwise they draw unequally, and spoil both the work and one another.

In this case of matching them, regard must be had to threethings; their height, their strength, and their spirit: for some are tall that have not much strength; and others have a great deal of power that are sluggish.

In general they are very tractable and gentle, but regard must be had to their feveral natures, for they will not be forced out of them by any ufage; and they may be greatly injured in the endeavour.

Of all the kinds the pyed Lincolnshire oxis the fittest for labour. He is naturally long-bodied, and till put up to feed, is less fleshy than any of the other good breeds; though he takes to sattening very readily with rest, and a

good pasture.

When the young oxen are first put to work, a great deal of care must be taken not to overheat or satigue them. They must be suffered to rest in the middle of the day in hot weather, and the servant should give them some hay, which will support them in the new satigue of their labour, much better than grass. They must be well sed during the whole time of their labouring, for they will not do much if they be not kept in spirits by good nourishment; but in this let the husbandman understand moderation; for there is difference between seeding them for strength, and for sattening.

An ox for labour must neither be bare, nor must he be too fat; in the first case he will be weak, and in the other he will be lazy. They should be treated gently, for they do not understand blows and hard usage, and may easier be beaten into sicknesses and dis-

orders, than into labour,

In this way an ox may very well be kept to work feven or eight years, that is, till between ten and eleven years old; and in that time he will do the owner an incredible deal of bufiness, provided he thus understand how to manage him, for it all depends upon that; otherwise he will be as stubborn as an as, and will not be fit half his time for service,

Sometimes a young ex will prove very stubborn, vicious, and unruly; but this, when enquired into, will be found owing to fome bad usage at fetting out, for the ox has nothing of that bad disposition in his nature. When this happens, he must be kept hungry; and when he has sasted long enough, he must be made to eat out of the hand: when he is brought to his labour, he must be tied with a rope; and at any time when he grows faulty, he must be cherished, and sed with a mouthful of hay by hand; thus bringing him by soft means to quietness, and a readiness in performing his

business; for nothing else will do with this creature.

For the breaking a young ox to the field, no way is fo well as to fingle out one of the tamest of the old ones. that is of its own fize; and yoke them together. Let them be put to some flight work, and fuffered to do it eafily and flowly: they will thus draw equally, and the young beaft will become perfectly familiar to it. They will be apt to get into too flow a gait at first, but by degrees they must be spirited to be a little brisker in their pace; and after half a dozen times going out with this quiet beaft, the young one must be coupled with an ox of more spirit, that will learn him to go quicker. Thus he is to have his companion changed from time to time, till in the first month or fix weeks of his labour, he gets to draw with the brifkest of the stock.

This is the only way to get the ox to his speed; for at best it is not great, nor will he be brought to it by force.

The advantages of labouring with oxen are so great, that it is wonderful the practice does not extend farther. The ox of eleven years old, when he is unfit for labour any longer, may be fattened as well as at any time; and in the same manner if he fall lame, or by any other accident be spoiled for labour, at whatever age that happen, he may then be sed up for sale.

In this the ox has a great advantage over the horse, which, when aged, or spoiled by accidents, is good for nothing, and becomes an entire loss, and often a very great one to the sarmer.

The food of the horse is also a very expensive article to the husbandman, but that of oxen is cheap. They require no oats. They are very little liable to diseases, whereas one is never fecure of a horse at all. But though the ox does not require fo expensive food as the horfe, yet fuch as he eats must be good in its kind, and he must not be flinted. He must always have good grass to go to, and good hay in winter, else he will be of little service; for though he must not be fattened in his time of working, yet if he be not kept well fed, and in good spirits, he is worth nothing.

The greatest use of the ox in the way of labour, is that of plowing; and 'tis that for which they are suited

by nature. They will work at this in the toughest and heaviest grounds as well as horses, and do as much in a day. They do not ferve fo well for drawing of carts and waggons; and are not fit to be used much in places where the roads are good.

In most counties the farmer would do well to train up some of his oxen for draught, though it is better not to depend upon them entirely for that fervice in any. We have shewn for what they are most, and for what they are least fitted. Every farmer has occafion both for carting and plowing; and the horses are in general fittest for the former, and the oxen most profitable for the latter: therefore when there are more teams than one kept, fome should be of horses, and others of oxen, proportioning the number of either to the nature of the fervice, and of the roads and the ground. The of the roads and the ground. Farmer who keeps two teams only, will almost always find it his interest to have one of them of oxen, and the other of horfes.

In clayey lands, the oxen are most useful; and in chalky countries the least; the chalk foon spoiling their

feet.

It is a custom in some places where oxen are used for draught, to yoke them by the horns, but this is awkward and troublesome. It is left off in many places where it was once used; and ought to be in all. The common way of yoaking them together by the neck and breaft is vaftly preferable,

but harness best of all.

Whenever the farmer comes to a refolution of keeping oxen for labour, let him at the same time provide for a proper supply of them; and see that it be rather too much than too little, for it will always be more to his profit to fell what he does not want, than to buy for his necessary uses. To this buy for his necessary uses. end he should rear at least two oxen and two cow calves every year to keep up his stock; and put up his old, or injured beafts to fatten, and supply their places from this breed as occasion requires: for an ox, as before faid, whether put off the team forage or injuries, will fatten as well as at any other time, and will bring a good price at market; and afford as good beef as any other that had not been

When the husbandman buys in cattle to fatten, it should be either in fpring, or toward the beginning of October. These oxen which are bought in early in spring, will, with proper care, be fat in July, August, or September, according to the goodness of the foil, and the manner of feeding them, and according to the condition wherein they were bought. An ox that is very forward when bought in, and is turned into a very rich pasture, will be fit for market in ten weeks; but there is no need that every ox that is bought for this purpose, should be in this forward way; or that every one should be hastened to a market The care of condition in that hurry. the husbandman in this should be, to fuit his endeavours to the nature of his grounds, and to the best demand for the cattle : he may keep on fattening the whole fummer months, and anfwer his purpose better both for the market, and for having the best service out of his land, than if he hastened up all that he bought, or bought only very forward ones.

Those oxen that are bought in about the beginning of October, will in general be fit for sale early in the following fpring. There requires fome management in this article of the husbandman's bufinefs, for without it he may lose by his industry, but with due care he will find a fufficient profit in this way. These cattle being for fale early in spring, will always fetch a good price; but the winter feeding of them may eafily run away with what should

be his profit.

The method is to forward these in flesh, before the winter sets in hard; and then to take care only to keep them up in flesh during the hard time, with hay or turneps.

They may be thus kept in a condition for market whenever it is worth while to fell them; and be fure of fattening up with great ease very early in spring, to a certain advantage,

Another way of buying cattle in the beginning of October, to great advantage, is to purchase young lean oxen which will pay for their winter keeping by their growth, and be ready to fatten up early in spring, to the fairest and fullest profit.

Another very good time of buying oxen for feeding is in August, or the

beginning of September. These should be got forward as soon as may be, by putting them into very rich pastures, and they will be ready for the winter

This is the best method the husbandman can take, who has rich and fine pasture ground; for no other will support the large and valuable breed of these oxen. But he who happens not to have this advantage, is not altogether to decline thus much of the grazing business, which to the other proves

fo very advantageous,

Therefore he who has but moderately good pasturage, and is inclined to deal this way, should set about in a different manner. Let him buy in a number of young Welch heisers, instead of oxen, in August or September, and put them into the best of his ordinary pasturages. He is to take his chance whether these prove with calf or not, but either way they will answer

his purpofe.

If they prove with calf his business is to keep them till spring, and then he will sell them to a good advantage, with a calf by their side, for the dairy. If they do not prove with calf they will presently begin to fatten upon his ground, which, though poor, is yet very fine in comparison of what they have been used to, and he will be able to sell them out at a very good account at Christmas or in spring; at both which times meat is dear, and consequently cattle setch a price.

There heifers will, to the hurbandman thus fituated, answer, in some measure, the purposes of oxen; and he is not to complain they do not bring altogether such a price; because neither the cattle themselves, nor their keeping, have cost him so much as in the other instance. Such land being cheaper than the rich and sine pasture ground, on which the large oxen may

be fattened.

But there is this to be considered, that the advantage will be the greater, in proportion as the farmer has the convenience of hay, or turneps, which are the two foods for winter fattening of cattle; and in proportion to his nearness to some large city, where the demand and the price will answer to the expensive feeding of hay. About great towns they must afford to let a beaft eat a couple load of hay in a

winter, because the demand is certain and the price good: but this will not do in remote places.

Let the husbandman who buys cattle for fattening, take great care in the choice, for on that will depend a large share of his success. Let him examine their bulk and shape, and the forwardness they are in at the time, and after that proportion the goodness of the pas-

ture to their kind.

Those that are intended to be kept up for a winter, or early spring market, must be turned out in September into the rowens, till the weather become severe by much snow or a very hard frost; and till this time they will not

need any fodder.

Upon the coming in of the hard, weather they must have some hay regularly every morning and evening, which must be proportioned to what the ground still affords. The more they find there the less they want of the supply; and the less there is, the more hay must be each time given them.

The frosts have an effect upon grafs, especially upon the worst forts, to sweeten it. The sour grafs which the cattle had lest untouched for a great while, becomes palatable to them after two or three nights good frost, with a large white ryme. They will eat this greedily; and it will make hay the less necessary, till the snow covers it, and they cannot get at it, 'Tis at these times the foddering is to be largest and best; for without a due care they will, in a little time, lose all the advantage they had made in many weeks.

For those oxen that were bought in lean, and are not got into any great degree of flesh by the beginning of the hard season, straw will do instead of hay: and the husbandman must begin with barley straw, and then come to oat straw, both which are very good food to cattle in this condition; and will keep them as they are, and in a readiness for any farther improvement, when it comes upon easy terms.

Toward the end of winter the whole product of the ground that hath been thus fed, will be eaten up, and then the oxen are to be taken into the yard. If the husbandman has oxen in two conditions, (the one that he feeds with hay, the other with straw,) they must be put up separate; and their food must be put up in racks for them.

The

The farmer often complains that his cattle will not eat their fodder, when they are taken up into the yard, though they did freely when it was given them in the field. But this is generally owing to the folly of giving them too much at a time. An ox will often eat heartily and freely out of the crib for a time, till when he had often breathed upon it, what was left became quite difagreeable to him.

This is a delicacy in the nature of the animal, and nothing can break him of it; but all the inconvenience of it is eafily prevented, by giving these cattle a little at a time, and often. This being, for all reasons, the best way of foddering all cattle in the yard.

Let the husbandman take care that his yard be well stattered, and kept dry. Let there be straw enough scattered about it, that his cattle may lie sweet and warm; this will greatly assist in keeping them in good case; and he need not grudge the expence, for what the straw is worth will be many times over made up to him in dung. Their trampling this litter, with their dung and urine, converts the whole into a very rich manure; and the quantity becomes so considerable, that it is an article of great consequence.

When oxen are put to be fattened on land, they may be turned in either alone or with horses; or they may be put into the passures first, and the horses afterwards. Which ever way is used, let the husbandman take care of the time of turning in his oxen. Many think they ought to let the grass be very well grown before they put them to feed upon it; but they are greatly mistaken. There is not a greater disadvantage the farmer can lie under, in this way, than the having his passures too high grown before he puts the beasts into them.

The ox is a nice creature, and does not love a rank grass. In this case they only nip the tops, and the remainder rots upon the ground. When grass is grown too high, in autumn especially, it becomes four, and the cattle will not eat it freely before the frost has sweetened it to their taste.

If it happen the farmer have at this feason of the year, a pasture ground of tall grass, the best method he can follow is this. Let him first turn in his oxen in a proper number, and they will

eat off the tops; but as they will meddle with no more of it, when this is done they should be removed out of it. Horses are then to be turned in, who, not being so nice as the ox, will eat it down lower; and after these he may seed it with sheep, which will still find a great deal for their purpose, that the ox and the horse had both left.

If the pastures in the farmer's grounds be all of nearly the same kind, and all of a proper grafs for feeding of his oxen, still let him frequently change their place, removing from one of the closes to another. This answers a closes to another. double purpose; it gives the cattle a variety of food, and it gives every piece of the ground rest at times to shoot afresh after their eating. Their taste is so nice as to distinguish the growth where it appears to our eyeall the fame; and therefore they will be pleafed with removing from one ground to another: and each close will shoot up with spirit and freshness from their cropping of it. when it is quiet for a little time from the treading of their feet.

Let the husbandman always purchase as large a breed as his ground will maintain; and by this management he will find it support a better fort than perhaps he might imagine it could, or than it in reality would do, in the hands of a less skilful person. The size of the ox is a vast article, for it makes great addition both in the flesh and tallow.

Let the ox have a smooth forehead and a deep belly, if he be intended for fattening. The strength of his join t is more the matter when he is first defigned for labour.

In buying oxen for fattening preference is to be given to the young; but if they be somewhat older, let the farmer see that they are healthful. Let him feed his own breed for slaughter, if he wies their labour till the best time of their working is over, as before directed; but let him not bring them in for fattening at that age, without he bargain accordingly.

It is always a good fign of health that an ox frequently licks himself. It is a proof that he is in good humour with himself, and in spirit; for when they grow fickly, dull, and dronish, they utterly neglect themselves, and their coat becomes rough, and stares for want of this little care of their own, which keeps it in order.

Never-

Nevertheless, every thing is to be understood within the bounds of moderation. This licking of himfelf, which is in general a fign of health in the ox, may be a disease. They will sometimes lick till they cannot eat, for they fwallow a great many of the hairs they lick off, and they will fometimes get together into a kind of ball in the ftomach, which will impair the creature's health. In this case the owner must, at times, wash the ox with a strong decoction of worm-wood, which is a tafte it abhors; and finding this bitterness on the skin, it will be cured of licking; as children are weaned by rubbing the nipple with aloes.

Some, for this purpose, cover the creature with his own dung, but this is a filthy way. As the licking is always done for cleanliness, the ox will often tire himself, from day to day, with endeavouring to get this off; or else he will utterly neglect himself, which will prove of as bad confequence.

In examining how the ox proceeds in fattening, the furest way is to feel the hindermost rib. If all be soft and loofe about that, 'tis a proof that the creature is getting into good flesh. The part behind the shoulders in an ox, and the navel of a cow, are the parts to be examined, to know how they encrease

Finally, there is one thing we fhall recommend to the husbandman very strongly, from experience, as excellent toward the fattening of cattle, and this is the bleeding of them at proper times. This should be done once at least, and commonly it may be done twice, with great benefit during their feeding,

The method to be observed is this: in the cattle bought in spring, always to bleed them as foon as they are put to pasture, which makes them take to fattening directly. In those bought in autumn, follow the same method of bleeding, at the time of turning into good pasture; which will not only help their fattening, but prevent disorders. This is all there is to do with those intended for the winter market; but for fuch as were bought lean to be kept for growing in winter, and fattened up in fpring, have them blooded twice, once when they are bought in, and a fecond time early in fpring, when they are going into the pasture for fattening.

OX-BOOSE. An ox-stall, or cowstall, where these creatures stand in the winter.

OX-HARROWS. Very large har-

rows, called, in fome counties, drags. OX-GANG, or Ox-gate. A quantity of land measuring fifteen acres, being as much ground as a fingle ox is supposed to be capable of ploughing in

OX-EYE, [Buphthalmum.] There are feveral species of herbaceous and shrubby plants, which ornament the

pleasure garden and green-house, and are all propagated by seeds and cuttings.

OXEYE-DAISY, [Bellis-Major.]
This plant is frequent in fields, and among corn, flowering in May or June. The leaves have a mucilaginous, fubfaline, roughish taste. They are fald to be detergent, refolvent, aperient, and also moderately astringent. Geoffroy relates, that the herb, gathered before the flowers have come forth, and boiled in water, imparts an acrid take, penetrating and fubtile like pepper; and that this decoction is an excellent vulnerary and diuretic.

OX-SLIP. A species of cowflip.

ACK-HORSE. A horse used for carrying loads on a faddle made for that purpole,

PACK-SADDLE, A faddle contrived for the carrying of burthens on a horfe's back.

PACK of Wool, is seventeen stone and two pounds, or two hundred and forty pounds weight.

PAD. An easy pacing horse, PAD. A low saddle.

PAD. PAD. A road, a path.

PADDLE. An instrument to open gutters in a water courfe, to clean the ploughshare from dirt, weeds, &c. PADDOCK, A fmall field or

inclosure.

PAIGLE. A cowflip.

PAHL. A wooden veffel to carry water or milk in.

PAINS, or watery fores on the legs and sterns. These are caused by a serous matter oozing through the pores, which is indued with fuch a sharpness, that it makes the hair fall off from feveral parts of the legs and pasterns; sometimes it loofens the Coronet from the hoof; and fometimes the flesh appears as if it was disjoined from the bones and finews; wherever the matter runs, it fo hardens the fkin, that it is apt to break out into cracks and refts, which discharge abundance of stinking matter, as in the abovementioned case. The cure confifts chiefly in internals, and in those things that are proper to rec-tify the blood, as decoctions of boxwood, guajacum and faffafras, &c. or the faid woods may be rasped and mixt with his oats, and fometimes among dry bran. All the medicines prescribed in the farcin may be made use of in this case: but if the horse be inclinable to a dropfy, which may be known by the yielding of the swelling, and likewise as the tore legs will also be affected, and by the other figns peculiar to that diftemper, he must then be treated accordingly; mean while the following applications may be made outwardly.

' Take honey, turpentine, and hog'sgreafe, of each a like quantity: melt them over a gentle fire in a glazed pipkin, and add a fufficient quantity of wheat flour to make it into a poultice.' Or this:

Take fænugreek meal, bean flour, linfeed meal, and mustard feed pounded, of each a like quantity. Boil them over a gentle fire, with a fufficient quantity of ointment of marsh-mallows; into the consistence of a poultice.'

Thefe must be applyed warm to the legs and pafterns, to draw out the matter, and bring down the swelling. If there be foulness, you may take a pound of black foap, half a pound of honey, four ounces of burnt allum, two ounces of verdigrease in powder, a pint of brandy or spirit of wine, with a suffi-cient quantity of wheat flour. Let this be spread on cloths, and applyed as the former.

As foon as the fwelling is abated, and the moisture dryed up, it must be very convenient to keep the legs and pasterns rolled up with firm bandage, whereby the parts will not only be kept close, but the influx of fresh matter prevented; for the continuance or frequent returns of those watery eruptions brings fuch a loofeness into the legs, that it causes a rottenpess in the frush, breeds splints; and, sometimes by rotting the tendons, becomes the cause of quitter-bones, foundering, and other diftempers in the feet.

'This dif-PAINPISS, or Strangury. eafe happens most frequently when there is an obstruction of the dung hardened and indurated in the ftraight gut. yet sometimes it proceeds from another cause, and is most likely occasioned by an inflammation of the bladder, or an ulcer in the kidneys; for when there happens to be an ulcer in those parts, the sharpness of the matter proceeding from thence may no doubt cause pain,

when it passes into the Urethra or pisspipe, by abrading and carrying off the mucus that should defend that sensible part, so that a horse in this case must piss in pain; and as this will also cause an inflammation there, instead of pissing freely, he will often dribble.

An inflammation in those parts, arifing from any other cause, as hard riding, too long a detention of his urine, has generally the same effect; but an inflammation of this kind happens the more readily if there be a lentor of the

dung.

To remove all fuch diforders, it will be neceffary to give emollient foftning clysters, made of a decoction of mallows, marsh-mallows, mercury, camomile and the like, with a mixture of oils and other slippery things, or clysters made of fat broths; and to make them a little purgative, common treacle or manna may be diffolved in them, to the quantity of fix ounces or half a pound.

Half an ounce of Sal Prunella or purifyed nitre may be diffolved in his water for two or three days together, or two ounces of crude tartar may be hoiled in it; and among his provender may be mixt the leaves of wawberries, rad-

dishes and turnip-tops.

But if after hard riding you have reason to suspect an inflammation in the kidneys, the bladder, or urinary passage, which must at the same time be accompanied with severish symptoms, it will then be very proper to take blood from the neck-vein, and the use of the clysters may be repeated as often as you shall see occasion; but if you have reason to fear an user in the kidneys, in that case all cleansing balsamic medicines are to be complied with, for which purpose we chiefly recommended the following balls.

Take gum benjamin half a pound.
Balfam of capivi, Flour of brimftone, each fix ounces. Bees wax three ounces. Crude opium one ounce. Honey four ounces. Beat them well together with fyrup of marsh-mallows, enough to make into balls of two ounces each, one to be given every morning, an hour before his water.

PALATE, Falling off. A troublefome diforder in oxen, from over driving, &c. rub the palate with pepper and fal tmixt together.

PALE. A piece of wood fplit or fawed, for the purpose of sencing, where hedges cannot be made, or are not sufficiently secure.

PALING. Fencing with pales.
PALISADE. A row of handsome pales set up by way of ornament or defence. The gardeners use this word to denote a row of trees, which bear branches and leaves from the bottom, cut and spread in the manner of a garden wall, along the side of an alley or the like, so as to appear like a wall covered with leaves.

PALM-TREE. There are feveral species of this tree, as the DATE-tree,

MACAW-tree, CABBAGE-tree, &c.
PALMETTO. A species of palm,
the leaves of which are used as thatch
in the West-Indies.

PALMS. The flowers of the willow. PALSY. This diforder has been usually reckoned the fame with the staggers, but certainly, without any reason whatsoever; the former implies the absence of sever or stimulus, the latter, an increased degree; in the one, warm cordials will be necessary; in the other, emollients and anodynes. Warm stimulating embrocations will be very proper. Such as the following:

Take spirits of wine and camphor 6 ounces, spirits of sal ammoniac 2 ounces, mix and bathe the part affected night and morning.

fected night and morning.
Such medicines should be given as will promote the circulation of the blood. Such are the following balls:
Take affascetida fix ounces, grains

of paradife in powder two ounces, aloes two ounces, honey to make 6 balls, give one night and morning, PANIC, [Panicum.] A plant re-fembling millet in its stalks, leaves, and roots; but differing in its spikes, or ears, which are about the thicknessof a man's finger at their base, and growing taper toward their points. They are about eight or nine inches long, and closely fet with a small roundish grain, fometimes white, fometimes red or purple, and sometimes yellow. It is raised and reaped in the fame manner as millet, but does not require fo much rain. This plant grows naturally in both the Indies, and is cultivated in many parts of Europe for the food of men. Cakes and bread are made of it in Germany, Italy, and the fouthern parts of France; but it is not reckoned fo good nourish-

ment as millet: nor is the German fort fo much esteemed as the Italian; though the former ripens best in cold countries, where it is frequently fowed in land which will not produce better grain. It thrives most in a dry stiffish foil, fuch as the fides of hills, and even in stony ground; grows to the height of about four feet, and branches very much; for which reason the horse-hoeing hufbandry is by far the fitteft for it. The plants, if managed rightly, should stand eighteen inches asunder, in rows three feet apart, that there may be room to hoe the ground between them, and to keep them clear from weeds. When grown pretty tall, they should be sup-ported by stakes, lest the wind break them down; and particular care must be taken to guard against birds when their feeds begin to ripen.

PANNAGE. The food which fwine feed upon in woods, as acorns, and the mafts of heech. It also fignifies the money taken by the King's agiftors, for the privilege of feeding hogs in the

King's forests.

PANNEL. A low faddle. Hearts eafe. PANSIES.

PANTING-EVIL. A diforder in cattle, caused by extraordinary labour, over heat, &c. the symptoms are, great faintness and unwillingness to move,

fighing, moaning, &c.

Let the beaft be kept very quiet and be supported with some ale spiced, and bread sopped in it; or, boil some rosemary, and fome wormwood, in fome ale, and give the beaft to drink.

Give an ounce of Bracken's cordlal, every four, fix, or, eight hours. Let the food be a little bran and oats, with

fome very fweet hay.

fome very fweet hay.

A peculiar kind of

tiles made of clay, moulded and burnt.
PAPAW. A plant of the gourd, or fquash kind, growing in the Caribbee Illands, and the warmer parts of Ame-

rica. May be propagated as melons.

PARADISE-APPLE. A kind of apple tree, formerly much efteemed for

flocks to graft on.

Grains of PARADISE. This fruit is about the fize of a fig, divided inter-nally into three cells, in each of which This fruit is are contained two rows of fmall feeds like cardamoms. Thefe feeds are fomewhat more grateful, and confiderably more pungent, than the common cardamoms, approaching in this respect to

pepper, with which they agree also in their pharmaceutical properties: their pungency refiding, not in the distilled oil, as that of cardamom feeds does, but in the refin extracted by spirit of wine.

PAREIRA BRAVA. This is the root of an American convolvulus, brought to us from Brazil, in pieces of different fizes, fome no bigger than one's finger, others as large as a child's arm: it is crooked, and varioufly wrinkled on the furface; outwardly of a dark colour, internally of a dull yellowish, and interwoven with woody fibres, fo that upon a transverse section, a number of concentric circles appear, croffed with fibres, which run from the center to the circumference: It has no fmell; the taste is a little bitterish, blended with a sweetness, like that of liquorice. This root is highly extolled by the Brazilians and Portuguefe, in a great variety of difeafes, particularly against suppressions of urine, nephritic pains, and the calculus. In the two first, Geoffroy says he has given it with good success, and that the patient was almost instantly relieved by it, a copi-ous discharge of urine succeeding. He likewise observed large quantities of gravel, and even small stones, voided after its use : this effect he attributes not to any lithontriptic power, but to its diffolying the vifeld mucus, by which the fabulous matter had been detained. He likewise relates, that he has had frequent experience of the good effects of this root in deterging and healing ulcers of the kidneys and bladder, where the urine came away purulent and mucous, and could not be voided at all without extreme pain; by the use of the pareira, the urine soon became clear, and of a due consistence, and was evacuated freely; and by joining to this medicine balfam of Copaiba, the ulcer perfectly healed. The attenuating quality, which he had discovered in this root induced him to make trial of it in other diseases, proceeding from tenacious juices, and in these likewise it fully answered his expectations: in humoral afthmas, where the lungs were stuffed up, and the parient almost suf-focated by thick phlegm, an insusion of pereira, after many other medicines had proved ineffectual, occasioned a plentiful expectoration, and soon completed a cure : in the jaundice, proceeding

ing from thick bile, it did excellent fervice; but in another icterical case, where the liver was swelled and hard, this medicine did no good. His dofe of the root in substance is from twelve grains to half a dram, in decoction two or three drams.

PARK-LEAVES, St. John's wort. PARSLEY. The name of a wellknown herb, which is cultivated in gardens for culinary purpofes, it being more used in the kitchen than any other herb whatfoever; it will tolerably endure cold, but is apt to be deftroyed in very fevere winters, especially where the land is moift; it is commonly fown in the spring, and sends forth a stalk the year after, which slowers in June or July, and the feeds ripen in

August.

The common parsley is, by some skilful people, cultivated in field for the use of sheep, it being a sovereign remedy to preferve them from the rot, provided they are fed twice a week for two or three hours each time, with this herb: but hares and rabbits are fo fond of it, that they will come from a great distance to feed on it.

Baftard PARSLEY. See BASTARD. Mountain PARSLEY. Candy carrot. The feeds Macedonian PARSLEY. of the Macedonian parfley area ftrong carminative, it is cultivated by feed, like the common parfley.

Baftard-flone PARSLEY. See BAS-

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PARSNEP, [Paffinaca.] The name of a well known root, cultivated in the fame manner as carrots. If you intend to fave the feeds of this plant, you should make choice of some of the longest, straitest, and largest roots, which should be planted about two feet afunder, in fome place where they may be defended from the ftrong fouth and west winds; for the stems of these plants commonly grow to a great height, and are subject to be broken by strong winds, if exposed thereto; they should be constantly kept clear from weeds, and if the feafon should prove very dry, you should give them some water twice a week, which will cause them to produce a great quantity of feeds, which will be much stronger than if they were wholly neglected. Toward the latter end of August, or the beginning of September, the feeds will be ripe; at which time you fhould

carefully cut off the heads, and spread them upon a coarle cloth for two or three days to dry; after which, the feeds should be beaten off, and put up for use; but you should never trust to thefe feeds after they are a year old, for they will feldom grow beyond that

PASSION-FLOWER, [Poffifiora.] The name of a very beautiful having long flender flalks, which run a great length, and require fupport; they are covered with a purplish bark, and are furnished at each joint with a digitated leaf, composed of five fmooth entire lobes, connected with the stalk by pedicles, about two inches long, having two small leaves embracing the stalks at their base; and from the same point comes out a long tendril, which twifts round the neighbouring support; the flowers come out at the same joints as the leaves, supported on footstalks almost three inches long; these flowers have a faint smell, and continue but one day; they come out in July, and there is a diurnal fuccession till the frost in autumn puts a stop to them.

This plant may be propagated either from feeds, layers, or cuttings; they require a good aspected wall; where they may have height for their shoots to extend, which should be properly trained against it; and in the spring, the plants must be pruned, when all the fmall weak shoots should be cut off, and the strong ones shortened to about four or five feet long, which will cause them to put out strong shoots for flow-

ering the following fummer.

PASTURE-LAND, Is properly fuch land as being laid down to grafs, Is properly is kept for the purpose of feeding cattle, not for mowing; but this distinction is not firitly observed, and it most usually means, all lands which have been laid down to grafs, whether for mowing, or feeding of cattle. See MEADOW

The following method of improving wet paftures, feems to be the refult of

experience,

" As I have, fays an ingenious hufbandman, within a few years, not only had some experience in my own farm, but observed the methods employed by many neighbouring gentlemen and farmers in mending their paftures, I shall communicate a few of my remarks to you on the improvement of

wet pastures; which may prove, per-haps, of some little utility, as I shall Tpeak of nothing but what I have either performed myself, or feen hereabouts.

" The particular lands of which I fpeak are loofe, woodcock, brick-earth foils, for about eighteen or twenty inches, and under that, clay to a great depth.

Some that I have drained myfelf were exactly level, fo as to be quite poisoned with the wet, which could

not drain of,

" From the best observations I could make on many experiments, the following is the method which answers best to improve them. I shall also give

you the expence with us.

"The first thing to be done is, to make Jarge, deep ditches round every field, and, if the fields are large, to divide them into smaller, of five, fix, or feven acres each, by new ditches; nothing is attended with a more sudden improvement of all the ground near the borders of the fields, than good

" I generally make mine fix feet perpendicular deep, seven wide at top, and three at bottom. I never pay for them by the rod (which is customary) but give two-pence halfpenny per load, of thirty bushels, for all the clay, &c. that is thrown out of them, and two shillings and fixpence a score loads for filling and spreading it.

" Those ditches should be made in fuch a manner that no water can remain in them, but a descent from one

to another, to carry it quickly off. " It may eafily be imagined how much these must drain the land, betides the quantity of manure (clay) which arises out of them. Add to this the great convenience of having fuch fences about a farm, that the farmer is fure to find his cattle wherever he turns them, instead of their break-ing perpetually into his corn or hay fields, which, in multitudes of farms, is so often the case: it is sometimes the work of a boy, only to be hunting after hogs and sheep that go aftray for want of good fences.

" In the banks of new ditches we always lay white-thorn, fifty roots to a rod (the workmen are allowed fixpence per hundred for gathering them;) but I always avoid intermixing any thing with it, especially hasel, for in

the nut feafon, fences are pulled to pieces for the fruit, by all the boys and girls in the neighbourhood; and oak, ash, &c. only gives an opportunity to get over the hedge with greater ease. Sallow, willow, elder, &c. are to be avoided in the hedge, or by way of hedge-stake for the dead hedge, as they grow fo fast as quite to overshadow the quick, and even destroy it. After frequent cuttings, to render the plants thick and strong, I keep the quick regularly clipped, which, in a few years, renders the fence impenetrable to man or beaft, confidering the largeness of the

" If an old fence is grown bad and thin, or composed of improper plants, I never yet observed it improved by planting quick in the gaps: the best way is, to reverse the bank, and plant

fresh quick.
"One advantage arising from good fences is not apparent at first fight. the difgrace be it spoken of most of the gentlemen of large fortunes round Bury, the game is wretchedly destroyed by poachers, who take it with night-nets. These vermin, who are generally labourers, fwarm in every village round me. Their method is this: they take the farmer's horses out of his fields, and, after their doing a hard day's work, ride them all night, as fast as they can make them go, over the stubbles, to catch the partridges, blundering over every hedge (except fuch as I have described) in their way, oftentimes staking the horses making gaps in the sences, riding over standing corn, clover for feed, or any thing that is a cover for birds, and, after damaging the farmer in a most shameful manner, carry the produce of their infamous labour to many, who, to their great dishonour, encourage these rascals for their convenience. The money they get is spent at the next alehouse, and instead of doing the farmer a good day's work, they are drunk, asleep, or idle, the whole day.

" Now there are very few farmers horses that will leap a gate; but most will plunge through such hedges as are common hereabouts: none could pass fuch ditches as I always make and recommend. A farmer in this parish has fo effectually fenced in his fields with prodigious ditches, that I have heard him declare, that not a fingle

night-netter has been on his grounds on horse-back; and were they to attempt it, they would lose more time in passing one ditch than was necessary

to drag some whole farms,

"The pernicious effects, to farmers, of this abominable practice, are notorious, and cry aloud for redrets: if they would ease themselves, I know of no way but such ditches as I have described.

" But to return :

"When the ditching is done, the next work is to land-drain the whole fields in such a manner that every part of them may be laid dry. In a pasture of fix acres, I did two hundred rods. If there is the last fall in any part, or any place more wet than others, the drains should be cut through them. If the furface is exactly level, the depth of the drains should vary, so that the water may every where have a descent.

water may every where have a descent, "These drains are made here, in general, thirty-two inches deep, twenty inches wide at the top, and four wide at the bottom. They are filled eight inches deep with either stones or wood; but I shall ever recommend the former, as the most effectual and lasting, to those who are not defirous of saving the difference of the expence. However, I know many fields in this parish and neighbourhood that are drained with wood, and which answer ex-tremely well; and I have been affured that they will last twenty or thirty years. Nay, in some parts of Essex I hear they do it with straw alone; but this must be of service for only a few years: if stone be used, there can be no doubt of its lafting. The labour of the whole is three-pence per rod; fometimes it is done for two-pence

" If with stone of the farmers, a load of thirty bushels will do three rods, which costs one shilling and a halfpenny stubbing and picking; fo the expence of a rod is feven-pence, besides carriage of the stone, which is not much: but if he buys his stone, as is much the most probable in this country, we may suppose he must go two miles to fetch it, and give a shilling for eighteen bushels ready picked: the carriage is worth a shilling more, and reckoning the eighteen buthels to do a rod and half (which is near the matter) the stone of it will cost per rod, one shilling and four-pence,

faggots will cost if he buys them, or be worth if he has them, five shillings, and cost cutting one shilling. They will do ten rods; fo that the whole expence of doing a rod with them will be ten-pence, and of stone one shilling and seven-pence.

"The very first year the prodigious advantage of these drains appears, especially if the season proves wet. The grass (or corn if in ploughed fields, for it answers in all) will be fresh, vigorous, and sweet, wherever the pastures are

drained.

"I have a field of fix acres (mentioned above) which by land-draining, ditching, and manuring, is an exceeding good pafture, and has produced two tuns and ten hundred weight of hay per acre, in a very good year, and generally thirty-five hundred weight per acre; whereas the paftures adjoining are fearce worth the farming, and let but at feven shillings an acre, producing fearce any thing, but a little feed for lean cattle. The foil is the fame in both; the fix acres, about twelve years ago, being full as bad as the reft.

"To improve fuch wet land, nothing can be more advantageous than the clay which is thrown out of the ditches. Eighty loads per acre is the quantity I have laid on, and have been told by feveral fenfible farmers (who clay a good deal) that it is a proper covering; but if nothing is mixed with it, ninety-five or one hundred. I know a piece of grafs-land greatly improved, on which were fpread one

hundred and fifty loads.

" My method is to make a large hill of manure, by first laying a quantity of clay regularly on a heap; then placing a thin layer of muck, fuch as I have, upon it, either my stable or rack-yard dung, or bringing it of any kind in my waggon from Bury; on this layer, another thick one of clay; then the fecond of dung, and fo on; letting the proportion be about twenty loads of dung to fifty of clay. Thefe heaps, after remaining fix months without stirring, I mix well together by turning them over, which a workman will do at the rate of eight shillings for one hundred loads. Let it lie fix months longer in this state, and then carry it on to the land, paying two shillings and fix-pence per score loads for filling and spreading. This I take, from experience, to be by much the best way of manuring with clay, as it works and impregnates the soil

much fooner than alone.

"Whenever I clay arable land, I do it on clover pastures, after the crop of corn is off, managing it in the same manner as for pastures. If it is ploughed in directly, it is several years before it works; but having a winter and summer to dissolve and powder it, it was the into the soil more equally, and in a properer state for improvement.

in a properer state for improvement.

"These are the principal points to be observed in improving such wet, cold, loose, passures as I have described: some that I have quite changed by these means were half over-run with moss and rushes; but draining them thoroughly, and claying them, kills all rubbish of this fort, and presents the farmer with so admirable a view of good passure for dairy or grazing, where so lately nothing could live, as is to be equalled in scarce any thing of the kind.

"But as all improvement ceases to be such when more money is spent in it than the advantages will repay, I shall in a few words display how far this is from being the case here. I will suppose two or three fields are improved, amounting in the whole to

twenty acres,

Sixty loads of clay per acre thrown out of the ditches, twelve hundred loads, at two-pence half-

penny per load — 1:

I will suppose fixty rod of new ditching done, which, before clay is thrown out by the load, will cost one shilling per rod

"Three thousand quicksets at fix-pence per hundred 0 15 0

29 3 4

"Land-draining feven hundred rods with bushes (this is the quantity I have now marked out in a field of twenty acres) at ten-pence per rod

"N. B. I had a great part of my last crop of barley killed in this field with the wet: I had therefore a fine opportunity of marking exactly where the drains should be made, which ought, on such occasions, never to be omitted, were it only for the common water-furrows which are made for every crop. In some fields, unless such a guide offers, it is very difficult to tell exactly where to make the land-drains.

Turning and mixing one thousand fix hundred loads of manure —

"Filling and spreading one thousand six hundred loads, at two shillings and sixpence per score — "I will suppose that the work

I will suppose that the work may be done the sooner if the farmer brings one hundred loads of the four hundred of dung from the hearest town; and as I have not reckoned the horses and driver for the clay cart, I shall not in the bringing the dung: therefore the expences per waggon load will be, the cost three shillings, boy fix-pence, and turnpike fix-pence, and turnpike fix-pence. A waggon load is two tumbrel loads (in this country) so fifty loads, at four shillings, are — 10

Total 71 6 4

"This is three pounds eleven shillings and three-pence per acre: and supposing the profit to last but twenty years, although the draining and ditching part will last twice that time, and the clay five and twenty as good as at first; and the farmers hereabouts seldom change their farms, if tolerable ones, living in them their lives, and their sons after them, with leases of 17, 21, and 25 years; supposing twenty years profit, I say, the expences will then be, per acre, per annum, three shillings and six-pence halfpenny.

"So fmall is the expence divided. But now let us confider the profit,

"Such land as I have described never lets here for more than ten shillings per acre, by far oftener for eight shillings, or eight and fix-pence; and it is from my own experience, as well as various observations, that I affert the fame land, after the improvements, will let to any tenant for feventeen,

eighteen, and twenty shillings per acre.
" I will suppose it only sixteen shillings, though I am certain that is confiderably under the mark: he then gains, in point of rent, fix shillings per acre; and the whole calculation is abfurd, if we do not add his whole proportionable profit on the acre: fuppofing his profit on it before improvement was a rent, ten shillings; afterwards, it will undoubtedly be the same at least; which adds fix shillings more to the profit; fo that the whole will be twelve shillings per acre per annum, or eight shillings and fix-pence clear, after the improvement is paid,

" Twelve shillings per acre is per annum, for twenty years -" Expences of improvement -71

" Clear profit

169

" Or eight pounds nine shillings per annum. And if we reckon five per cent. interest for the seventy one pounds, that is, three pounds eleven shillings per annum, which, deducted from eight pounds nine shillings, leaves four pounds eighteen shillings per annum

absolute profit.

"Thus, I think, I have stated the case of this improvement clearly; and I must repeat it, that I speak from experience. The fum to be expended on twenty acres will appear large to most farmers, whose property is not considerable; but the proportion holds for a fingle acre; and those who cannot afford to improve twenty, may three, four, or five; and I make no doubt but fuch as attempt it will find their account in it greater than I have

" As I have mentioned a tumbrelload to be thirty bushels, and a waggon load to be but two tumbrels, I should observe that we carry away of muck fifty bushels at a time in our tumbrels, and so agree with our men

in proportion to the thirty bushel loads. "I have observed, that in making new ditches, or enlarging old ones, I never pay by the rod, but by the load : however, to those who chuse the former way, I would recommend that they have them worked by a frame of

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fmall flit deal, nailed into the exact fize of the intended ditch, and agree with the workmen to do their work by it: This will prevent disputes which

frequently arise. PATIENCE. dock, Monk's Rhubarb.

PEA, [Pifum.] The species are The greater garden pea; 2, the dwarf pea; 3. the rose or crown pea; 4. the sea pea; 5. Cape-horn pea; 6.

the winged pea.

There is a great variety of garden peafe now cultivated in England, which are distinguished by the garden ers and feedfmen, and have their different titles; but as great part of these have been feminal variations, so if they are not very carefully managed, by taking away all those plants which have a tendency to alter before the feeds are formed, they will degenerate into their original state; therefore all those persons who are curious in the choice of their feeds, look carefully over those which they design for feeds at the time when they begin to flower, and draw out all the plants which they dislike from the other. This is what they call roguing their peas, meaning hereby, the taking out all the bad plants from the good, that the farina of the former may not impregnate the latter; to prevent which, they always do it before the flowers open; by thus di-ligently drawing out the bad, referving those which come earliest to slower, they have greatly improved their peafe of late years, and are constantly endeavouring to get forwarder varieties; fo that it would be to little purpose in this place, to attempt giving a particular account of all the varieties now cultivated; therefore we shall only mention their titles, by which they are commonly known, placing them actable, or gathering for use.

The Golden Hotspur-The Charlton. The Reading Hotspur. Masters's Hotspur. Effex Hotipur. The Dwarf Pea. The Sugar Pea, Spanish Morotto, Nonpareil. Sugar Dwarf. Sickle Pea. Marrowfat.

Rofe, or Crown Pea. Rouncival Pea. Grey Pea.

Pig Pea, with fome others.

The Sea pea is found wild upon the store in Sussex, and several other counties in England, and is undoubtedly a different species from the com-

mon pea.

The fifth fort hath a biennial root, which continues two years. was brought from Cape Horn by Lord Anson's cook, when he paffed that Cape, where the peafe was a great relief to the failors. It is kept here as a curiofity, but the peafe are not fo good for eating as the worst fort now cultivated in England; it is a low trailing plant; the leaves have two lobes on each foot-stalk; those below are spearshaped, and sharply indented on their edges, but the upper leaves are fmall and arrow-pointed. The flowers are blue, each foot-stalk sustaining four or five flowers; the pods are taper, near three inches long, and the feeds are round, about the fize of tares.

The fixth fort is annual, This grows naturally among the corn in Sicily, and fome parts of Italy, but is here preferved in botanic gardens for the fake of variety. It hath an angular flalk rifing near three feet high; the leaves stand upon winged foot-stalks, each fustaining two oblong lobes. The flowers are of a pale yellow colour, shaped like those of the other forts of pea, but are fmall, each foot-stalk fuftaining one flower; thefe are succeeded by pods about two inches long, containing five or fix roundish feeds, which are a little compressed on their fides. These are by some persons eaten green, but unless they are gathered very young they are coarse, and at best not so good as the common pea. It may be fown and managed in the fame way as the garden pea.

We shall now proceed to fet down the method of cultivating the several forts of garden pease, so as to continue

them throughout the feafon.

It is a common practice with the gardeners near London, to raife peafe upon hot-beds, to have them very early in the fpring; in order to which they fow their peafe upon warm borders, under walls or hedges, about the middle of October; and when the plants come up, they draw the earthup gently

to their ftems with a hoe, the better to protect them from frost, In thefe places they let them remain until the latter end of January, or the beginning of February, observing to earth themup from time to time as the plants advance in height (for the reason before given;) as also to cover them in very hard frost with peafe-haulm, straw, or some other light covering, to preferve them from being destroyed; then, at the time before-mentioned, they make a hot-bed (in proportion to the quantity of peafe intended) which must be made of good hot dung, well pre-pared and properly mixed together, that the heat may not be too great. The dung should be laid from two to three feet thick, according as the beds are made earlier or later in the feafon; when the dung is equally levelled, then the earth (which should be light and fresh, but not over rich) must be laid thereon about fix or eight inches thick, laying it equally all over the bed. This being done, the frames (which should be two feet high on the back side, and about fourteen inches in front) must be put on, and covered with glasses; after which it should remain three or four days, to let the steam of the bed pass off, before you put the plants therein, observing every day to raise the glasses, to give vent for the rising steam to pass off; then, when you find the bed of a moderate temperature for heat, you fhould, with a trowefor fome other instrument, take up the plants as carefully as poffible, to preferve the earth to their roots, and plant them into the hot-beds in rows, about two feet afunder, and the plants about an inch distant from each other in the rows, observing to water and shade their until they have taken root; after which you must be careful to give them air at all times when the feafor is favourable, otherwise they will draw up very weak, and be subject to grow mouldy and decay. You should also draw the earth up to the shanks of the plants as they advance in height, and keep them always clear from weeds. The water they should have must be given them sparingly, for if they are too much watered, it will cause them to grow too rank, and fometimes rot off the plants at their shanks, just above ground. When the weather is very hot, you should cover the glaffes

glaffes with mats in the heat of the day, to icreen them from the violence of the fun, which is then too great for them: but when the plants begin to fruit, they should be watered oftner, and in greater plenty than before; for by that time the plants will have nearly done growing, and the often refreshing them will occasion their producing a greater

plenty of fruit.

The fort of pea which is generally used for this purpose, is the dwarf, for all the other forts ramble too much to be kept in frames. The reason for sowing them in the common ground, and afterwards transplanting them on a hot-bed, is to check their growth, and cause them to bear in less compass; for if the seeds were sown upon a hot-bed, and the plants continued thereon, they would produce such luxuriant plants as are not to be contained in the srames, and would bear but little fruit.

The next fort of pea, which is fown to fucceed those on the hot-bed, is the hotspur, of which there are reckoned feveral varieties; as the Golden hotfpur, the Charlton hotspur, the Masters's hotspur, the Reading hotspur, and some others; which are very little differing from each other, except in their early bearing, for which the Golden and Charlton hotspurs are chiefly preferred; though if either of these forts are cultivated in the same place for three or four years, they are apt to degenerate, and be later in fruiting; for which reason, most curious persons procure their seeds annually from some distant place; and in the choice of these seeds, if they could be obtained from a colder situation and a poorer foil, than that in which they are to be fown, it will be much better than on the contrary, and they will come earlier in the fpring.

These must also be sown on warm borders, toward the latter end of October; and when the plants are come up, you should draw the earth up to their shanks in the manner before directed, which should be repeated as the plants advance in height (always observing to do it when the ground is dry) which will greatly protect the stems of the plants against frost; and if the winter should prove very severe, it well be of great service to the plants to cover them with pease-haulm, or some other

light covering, which should be confrantly taken off in mild weather, and only suffered to remain on during the continuance of the frost; for if they are kept too close, they will draw up very weak and tender, and thereby be liable to be destroyed with the least in-

clemency of the feafon.

In the fpring, you must carefully clear them from weeds, and draw fome fresh earth up to their stems, but do not raife it too high to the plants, left by burying their leaves you should rot their stems, as is sometimes the case, especially in wet seasons. You should also observe to keep them clean from vermin, which, if permitted to remain amongst the plants, will increase so plentifully, as to devour the greatest part of them. The chief of the vermin which infest pease, are the flugs, which lie all the day in the small hollows of the earth, near the stems of the plants, and in the night-time come out, and make terrible destruction of the peafe; and these chiefly abound in wet foils, or where a garden is neg-lected, and over-run with weeds; therefore you should make the ground clear every way round the peafe to destroy their harbours; and afterwards, in a fine mild morning very early, when these vermin are got abroad from their holes, you should flack a quantity of lime, which should be strewn hot over the ground pretty thick, which will destroy the vermin wherever it happens to fall upon them, but will do very little injury to the peafe, provided it be not scattered too thick upon them, This is the best method I could ever find to destroy these troublesome vermin.

If this crop of pease succeeds, it will immediately sollow those on the hotbed; but for fear this should miscarry, it will be proper to sow two more crops at about a fortnight or three weeks distance from each other, so that there may be the more chances to succeed. This will be sufficient until the pring of the year, when you may sow several more crops of these pease at a fortnight distance from each other. The late sowings will be sufficient to continue the early sort of pease through the season, but it will be proper to have some of the large sort of pease to succeed them for the use of the family in order to which, you should sow

fome of the Spanish Morotto, which is a great bearer, and a hardy fort of pea, about the middle of February, upon a clear open spot of ground. These must be sown in rows about four feet as under, and the pease should be dropped in the drills about an inch distance, covering them about two inches deep with earth, being very careful that none of them lie uncovered, which will draw the mice, pigeons, or rooks, to attack the whole spot; and it often happens, by this neglect, that a whole plantation is devoured by these creatures; whereas, when there are some of the pease left in sight, they do not so easily find them out.

About a fortnight after this you

About a fortnight after this you should fow another spot, either of this fort, or any other large fort of Pea, to succeed those, and then continue to repeat sowing once a fortnight, till the middle or latter end of May, only observing to allow the Marrowsats, and other very large sorts of pease, at least four feet and a half between row and row; and the rose pea should be allowed at least eight or ten inches distance, plant from plant in the rows; for these grow very large, and if they have not room allowed them, they will spoil each other by drawing them up very tall, and will produce no fruit.

up very tall, and will produce no fruit. When these plants come up, the earth should be drawn up to their shanks (as was before directed,) and the ground kept entirely clear from weeds; and when the plants are grown eight or ten inches high, you fhould flick some brush-wood into the ground close to the pease for them to ramp upon, which will support them from trailing upon the ground, which is very apt to rot the large growing forts of peafe, especially in wet seasons; befides, by thus supporting them, the air can freely pass between them, which will preferve the bloffoms from falling off before their time, and occasion them to bear much better, than if permitted to lie upon the ground, and there will be room to pass between the rows to gather the peafe when they are ripe.

The Dwarf forts of peafe may be fown much closer than those beforementioned, for these seldom rise above a foot high, and rarely spread above half a foot in width, so that these need not have more room than two feet row from row, and not above an inch

afunder in the rows. These will produce a good quantity of pease, provided the season be not over-dry; but they seldom continue long in bearing, so that they are not so proper to sow for the main crop, when a quantity of pease is expected for the table, their chief excellency being for hot-beds, where they will produce a greater quantity of pease (provided they are well managed) than if exposed to the open air, where the heat of the sun soon dries them up.

The Sickle pea is much more common in Holland than in England, it being the fort mostly cultivated in that country; but in England they are only propagated by curious gentlemen for their own table, and are rarely brought into the markets. This fort the birds are very fond of, and if they are not prevented, many times destroy the whole crop. This should be planted in rows about two feet and a half asunder, and be managed as hath been directed for the other forts.

Although we have directed the fowing of the large forts of pea'e for the great crop, yet these are not so sweet as the early hotspur pease; therefore it will also be proper to continue a succession of those sorts through the season, in small quantities, to supply the best table, which may be done by sowing every fortnight; but all those which are sown late in the season should have a strong moist soil, for in hot light land they will burn up, and come to nothing.

The large growing forts may be cultivated for the common use of the family, because they will produce in greater quantities than the other, and will endure the drought better, but the early kinds are by far the sweeter tasted pease.

The best of all the large kinds is the Marrowsats, which, if gathered young, is a well-tasted pea; and this will continue good through the month of August, if planted on a strong soil.

The Grey and other large Winter peafe are feldom cultivated in gardens, because they require a great deal of room, but are usually sown in fields in most parts of England. The best time for sowing of these is about the beginning of March, when the weather is pretty dry, for if they are put into the ground in a very wet season, they are

apt to rot, especially if the ground be cold; these should be allowed at least three seet distance row from row, and must be sown very thin in the rows; for if they are sown too thick, the haulm will spread so as to fill the ground, and ramble over each other, which will cause the plants to rot, and

prevent their bearing.

The common white pea will do best on light fandy land, or on a rich loofe The usual method of fowing thefe peafe is with a broad-cast, and so harrow them in : but it is a much better way to fow them in drills about three feet afunder, for half the quantity of feed will do for an acre, and being fet regularly, the ground may be flirred with a hoe to deftroy the weeds, and earth up the peafe, which will greatly improve them, & the peafe may be much easier cut in autumn when they are ripe. The usual time for fowing of these pease is about the middle or latter end of March, on warm land, but on cold ground, they should be fown a fortnight or three weeks later. In the common way of fowing, they allow three bushels or more to an acre, but if they are drilled, one bushel will be full enough.

The green and maple Rouncivals require a stronger soil than the white, and should be sown early in the spring; also the drills should be made at a greater distance from each other, for as these are apt to grow rank, especially in a wet season, they should be set in rows three seet and a half, or sour seet asunder; and the ground between the rows should be stirred two or three times with a hoe, which will not only destroy the weeds, but, by earthing up the pease, greatly improve them, and also render the ground better to receive whatever crop is put on it the follow-

ing feafon,

The grey peafe thrive best on a strong clayey land; these are commonly sown under surrow, but by this method they are all always too thick, and do not come up regular; therefore all these rank-growing plants should be sown in drills, where the seeds will be more equally scattered, and lodged at the same depth in the ground; awhereas in the common way, some of the seeds lie twice as deep as others, and are not scattered at equal distances.

These may be sown toward the end of

February, as they are much hardier than either of the former forts, but the culture of these should be the same.

The best method to sow these pease is to draw a drill with a hoe by a line about two inches deep, and then fcatter the feeds therein; after which, with a rake, you may draw the earth over them, whereby they will be equally covered: this is a very quick method for gardens, but where they are fown in fields, they commonly make a shallow furrow with the plough, and fcatter the feeds therein, and then with a harrow they cover them over again. After this, the great trouble is to keep them clear from weeds, and draw the earth up to the plants; this, in such countries where labour is dear, is a great expense to do it by the hand with a hoe; but this may be easily effected with a small plough, which may be drawn through between the rows, which will entirely eradicate the weeds, and by ftirring the foil, render it mellow, and greatly promote the growth of the plants.

When any of these forts are intended for feed, there should be as many rows of them left ungathered, as may be thought necessary to furnish a sufficient quantity of feed; and when the pease are in flower, they should be carefully looked over to draw out all those plants which are not of the right fort, for there will always be fome roguish plants (as the gardeners turn them) in every fort, which, if left to mix, will degenerate the kind. These must remain until their pods are changed brown, and begin to split, when you should immediately gather them up. rogether with the haulm; and if you have not room to flack them till winter, you may thresh them out as soon as they are dry, and put them up in facks for use; but you must be very careful not to let them remain too long abroad after they are ripe, for if wet should happen, it would rot them, and heat, after a shower of rain, would cause their pods to burst, and cast forth their feeds, fo that the greatest part of them would be loft; but it is not adviseable to continue fowing the fame feed longer than two years, but rather to exchange their feeds every year, or every two years at leaft, whereby you may always expect to

PEACH-TREE,

PEACH-TREE, [Malus Perfica.] The varieties of peaches are very great, and by continuing to raise them from the feed or kernel, they may be mul-tiplied indefinitely. It is to be obferved, however, that notwithstand-ing the number of varieties that may be obtained that way, it is probable not one in twenty is possessed of the proper qualities, as is obvious by the cultivated forts now known in England; for most of the eminent nurfery men retain no more than from twenty to thirty forts in their catalogues, which they fell as real good peaches. Some indeed extend them to 40 or 50; but among thefe there are many of very indifferent qualities, and not worth the fpace they occupy; and fince it is not more expence to cultivate the best than the more indifferent ones, the first only deserve our regard; and as all the forts require to be trained against walls, the expence of building them is very confiderable, and a good aspected wall is too valuable to be filled with any but the capital forts.

These fruit are divided into two clasfes, viz. peaches and pavies; the former are distinguishable by the sless or pulp readily quitting the stone, that of the latter firmly adheres thereto.

Botanists allow only one distinct species of peach-trees; all the different forts of fruit being varieties of one

another, fo that the trees of all the varieties bear the particular marks of the original species. Varieties are.

original species. Varieties are,
1. The early white nutmeg peach; a very fmall oblong whitish fruit, ripe in July. 2. Early red nutmeg; a small, roundish, bright red fruit, ripe the end of July. 3. Anne peach; a small, round, & yellowish, white fruit, early in Aug. 3. Small mignon peach; a fmall, and found fruit, red towards the fun, ripe the middle of August. 5. Great mig-non peach; large, round, swelling on one fide, and beautifully spotted with red to the fun; middle of August. 6. Early purple peach; large and round; middle of August. 7. Late purple; ripe the middle of September. 8. White magdalen peach; round, middle-fized, whitish, and deeply furrowed on one fide; early in August. 9. Red magdalen; a beautiful large, round, red fruit; end of Angust. 10. Early Newington peach; roundish, middle-sized, and red to the fun; in August. 11. Old late

Newington peach; middle of September. 12. Montauban peach; middlefized, roundish, purple, and cleft on one side; end of August. 13. Belle chevreuse peach; middle-fized, oblong red; end of August. 14. Noblesse; large, roundifh, marbled with a purplish red; September. 15. Yellow Alberge peach; middle-fized, longish, yellow-fleshed fruit; middle of Auguft. 16. Relle-garde peach ; roundifh, and almost wholly of a deep purple colour; beginning of September. 17. Chancellor peach; a large, somewhat oblong, bright red fruit; September. 18. La Teton de Venus, or breast of Venus peach, a pretty large, somewhat longish fruit, deeply divided on one fide, both divisions swelling and rounded like a woman's breaft, and of a pale red colour on the funny fide; the end of September, 19. Rossana peach; a middle-fized, somewhat oval fruit, purple next the fun; early in September. 20. Perfique peach; a fine large, roundish, and somewhat oblong fruit, terminated at top by a small nipple, having the funny fide red, the other pale green; early in October. 21. Admirable peach; a very large, round fruit, beautifully adorned with red next the fun; middle of September. 22. Rambouillet peach; a large, longish, deeply-furrowed fruit, the funny fide beautifully reddened, the other yellow; towards the end of September. 23. La Royale, or royal peach ; a large, round, almost wholly red fruit, but deeply reddened next the fun; end of September. 24. Bourdine peach; a large, round, very fine fruit, bright red on the funny fide; ripe beginning or middle of September. 25. Bloody peach; a middle fized, deep red fruit next the fun, and its whole pulp of a blood red colour; late in October. 26. Nivette peach; a very fine, large, longish, deep purple fruit next the fun; middle of September. 27. Portugal peach; a large; round, even peach, generally spotted, and the funny fide elegantly red; end of September. 28. Royal George peach; a middle-fized, round peach, furrowed on one fide, of a deep red next the fun, the other part white, spotted with red; early in September. 29. Violet peach; a middlefized, roundish, oval, violet-coloured peach; the middle of September. 30. Catharine peach; a beautiful,

large, round peach, the funny fide of their early perfection, should also wholly of a fine bright red, the other be allowed a place in the collection. fide white; ripens in October. 31. Monstrous pavie of Pomponne; an amazingly large and beautiful peach, the shape round, and often measures twelve or sourceen inches in circumference; the fide next the fun deeply red, and the other a pale flesh colour; the end of October. 32. Cambray peach; middle-fized, longish, pale-coloured; in October. 33. Sion peach; a large, handsome, round peach, reddish on the funny fide, the other fide whitish; ripe end of September. 34. Narbonne peach; a very large peach, of a greenish colour ; ripe in October.

The above thirty-four varieties of peaches are the principal forts of that universally admired fruit, known in Great-Britain; and the name here annexed to each variety is that by which they are generally known to all the nursery-men, who cultivate the trees for fale, to supply noblemen and

gentlemen's gardens.

Many of the above varieties approach fo near to one another in fize, shape, and colour, that it is sometimes difficult to determine their difference without the strictest attention.

We do not pretend to recommend all these varieties as real good peaches, but for the fake of those who have large extent of walling, have collected all the principal forts to view, with fhort descriptions of their fizes, shapes, colours, and times of ripening, which it is prefumed will convey some idea of the respective varieties to the unexperienced, and help to direct him in the choice of the forts.

The forts that have the greatest claim to esteem, as the best and most beautiful, both in regard to fize, shape, colour, flavour, and the best bearers,

are the following:

The Anne peach, fmall mignon, great mignon, red Magdalen, belle garde, belle chevruese, mountauban, admirable, early Newington, late Newington, bourdine, nivette, la royale, purple, téton de Venus, Catharine, and great pavie of Pomponne; the latter chiefly for its prodigious fize and beauty, and, as a pickle, it furpaffes all the other forts.

The two nutmeg peaches, though of fmall fize and indifferent flavour, especially the white for t,on account

The bloody peach merits a place more for fingularity, than for the qua-

lity of the fruit.

The two Newington peaches, Portugal, Catharine, and monstrous pavie, may be deemed of the pavie tribe, their flesh adhering closely to the stone. The old Newington and Catharine are esteemed two of the most valuable peaches that are cultivated in England.

Peach trees in general will grow 15 or 20 feet high, if they have full scope; and if trained for standards, and permitted to take their natural growth, they form regular heads, but they do not ripen their fruit well on standards in this country, they being natives of a much warmer climate; fo that, to effect the ripening of their fruit perfectly, they require the shelter of a warm wall, to which their branches should be regularly trained.

The trees in general flower early in fpring; the flowers come out before the leaves, appearing chiefly on the shoots last year, arising some fingly, others in pairs, all along the fides of the shoot, to which they sit close; they are formed each of five fmall petals, and many stamina in the middle, with a fmall round germen, which becomes

the peach.

The general propagation of peachtrees is effected by budding them upon

plum-stocks.

But all the fine varieties of thefe fruit were originally obtained from the feed or kernel, and more new varieties may be gained by that means; but the process is somewhat tedious, and often terminates in but triffing success, in respect to the quality of the fruit so cbtained; for if you plant the stones of the finest forts, it is a thousand to one, if, out of a great number, you obtain one like the originals, and but few that have any real merit, fo greatly do thefe, and indeed all other fruits, vary from the feed. However, for the fake of experiment, there are many who have curiofity and patience enough to undertake the acquifition of new varieties by the above methods, and think themselves amply rewarded if they gain one or two new forts that poffers good qualities in respect to fize, form, colo 1, and flavour.

I is method of planting the flones

for that purpose, is, they should be planted in autumn, in drills about two or three inches deep, and in spring following they will come up, and after having one summer's growth, they should, in autumn or spring sollowing, be transplanted in rows in the nursery, and in a year or two after may be planted against any spare wall, pales, or reed sence, and trained as other peach-trees; and when they have shown fruit, those of merit should be planted where they are to remain, which you may propagate or encrease hyphyddian as hereafter directed.

by budding, as hereafter directed.

The only method of propagation, however, to continue, with certainty, the approved or any acquired forts of peaches, is by budding, i. e. inoculation; fince, by inoculating the bud of a tree of any of the kinds, in the stem or flock of any fort of peach, almond, or plumb, the bud unites with the faid flock, the head of which being cut off, the bud shoots forth, branches out, and becomes a peach-tree, which will produce fruit in fize, shape, colour, and flavour, exactly the same as that of the parent tree from whence the bud was taken, and by whichmeans you may multiply any of the forts of peaches, and other fruit trees at plea-fure, and with certainty; and besides, trees thus raised, much sooner attain a bearing state than those from the kernels.

Peaches, as above hinted, may be budded upon three or four different flocks, viz. upon those raised from their own kernels, upon the almond, apricot, and plumb.

There is however but one fort of flock proper for general use whereon to bud peaches, which is that of the plumb; the peach, the almond, and apricot stocks, are often attacked by the gum, and communicate it to the trees just as they arrive at a state of full bearing, and quickly go off; whereas, the plumb flock being in every respect hardier, and better fuited to different foils, peaches budded upon them are generally healthful, and of long duration; observing, however, that experience has proved them to be the most profperous and durable on one particular fort, which is that of the true muscle plumb.

The propagation or raising stocks fr m the varieties of plumbs indiffe-

rently, as also of peaches, almonds, and apricots, may with great ease be effected by sowing the stones of the fruit in autumn, in drills two inches deep, and they will rife freely the spring following; and in October they may be transplanted in rows two feet and half distant, and in the two following summers, those that are intended to form dwarfs, may be inoculated with peach buds.

But in respect to the real muscleplumb flock, this cannot be obtained in its true state from the stones, for they vary fo greatly when raised from seed, that not one in a hundred will prove of that fort; therefore, the only method to obtain the true muscle kind is either by layers in autumn, or by fuckers that are fent up from the roots of peach or plumb trees, that are known to be worked upon that fort of plumb. These should be collected in October or November; chuse those that are about the fize of a large goofequill; cut off any knots of old wood that adhere to their roots, and trim off all fide-branches, and plant them in lines two feet and half distant, and in the following fummer fome will be fit to bud for dwarfs.

The proper fized flocks to bud upon to form dwarfs, should be about half an inch thick.

But if intended to form half or full standards, the stocks, before they are budded, must be permitted to form stems an inch thick at bottom, and four, five, or six feet in height. The season for budding them is August, tho' some perform that work in June and July; but when budded too early, the buds are apt to shoot the same year, which shoots, being weakly, are either killed in winter, or, if they escape the frost, they never make great progres; therefore, from about the 25th of July to the 25th of Aug. is the proper period for that operation, and the buds will remain dormant till spring, when they will shoot forth with vigour.

The method of performing the operation of budding, and every thing relating thereto for those and other trees, is fully explained under that article. See *Incentating*.

We shall therefore only observe, that as Peach-trees sequire to be trained against walls, &c. they should be budded principally to form dwarfs, that

their

their branches may at first come out low, fo as they may by degrees be trained to occupy every part of the wall, from bottom to top; the flocks should therefore be budded within five or fix inches of the bottom, but where there are high walls to furnish, it is neceffary also to raise half-standards and standards, to occupy the upper part, while the dwarfs are gradually advancing to cover the whole; the stocks, to constitute such standards, should for half-standards be budded at the height of three or four feet, and for full standards at that of five or fix, or they may be budded near the ground, and the first shoot from the bud trained to the above heights to form a stem.

Observe to insert only one bud in each stock, the heads of which are to

remain on entire until fpring.

In March following, the heads of all the stocks are to be cut off sloping, just above where the bad is inserted.

Soon after this the buds will shoot forth, each will produce one strong erect shoot, which, by autumn, will probably attain three or four feet in height, and the trees have then acquired their first state of formation, which, in October or November, should be transplanted in the places where they are finally to remain; and in the spring after that, they must be headed down to a few eyes, to procure laterals near the place of inoculation, to give the tree its suitable form for the wall, and in two or three years they will bear fruit.

With respect to situation and expo-

With respect to situation and expofure, the peach-tree being originally a native of warm climates, is, in some respects, tender, and will not prosper, at least not bear well, in an open situation; so that for the general part, require to be trained against walls.

The trees themfelves, though hardy enough in respect to cold, yet the blossom and young fruit are extremely impatient of frost & cutting winds, which generally reign in this country at early spring, when the trees bloom and set their fruit: the trees, therefore, should be indulged with the shelter of a warm wall, or other substantial close sence, to which they should be planted close, and their branches regularly trained, which is necessary, not only to defend the blossom and young fruit the better from the inclemency of the weather, Yot. II.

but also that they may have all the advantages of the sun's influence, to accelerate its ripening, as well as to give it colour and flavour, which many forts, even with all the aid in our power to give, hardly effect in unfavourable seasons in this country.

The proper aspected walls, or expofure for the fine sorts, is that of a due south; some may also be planted upon an east aspected wall, and in favourable seasons the trees will also sometimes set and ripen fruit tolerably on a western aspect. However, where there is walling enough, let the capital forts be always planted against such walls as enjoy the greatest degree of the south sun, as even that aspect, in some seasons, is barely sufficient to ripen some of the late forts of these fruit, in any part of this island.

Such of the forward kinds that you defire as early as possible, should have the warmest fituation on the best south wall, which, though some are inferior in fize and flavour, yet when obtained at the earliest season, they are highly acceptable as a rarity in the defert.

With respect to soil, the peach-tree will prosper in any common soil of a garden, where it is not less than fifteen or eighteen inches depth of proper staple, that is such as is proper for the culture of common kitchen herbage, and where mossiture is not very copious; but if the depth of good soil in the fruit-tree borders is two or three feet, it will be the greater advantage.

The breadth of the borders against the walls where it is intended to plant these trees, should never be less than three, but those of six or eight feet are the most proper width.

If the natural foil of the borders is of a moderately light, pliable nature, and of proper depth, it is a happy circumstance; and if it is of a loamy temperature, it will also be a particular advantage, provided however there is such depth of proper staple as above noticed, before you come at gravel, clay, or any other bad soil at bottom, when nothing more than common digging is necessary; but where there is less than that depth, the borders must be raised with a due portion of good fresh earth and rotten dung, working the whole well together.

Where good rich or pliable loam could be easily obtained from the fur-

face of fome contiguous pasture, common, or other field, and with store of rotten dung, working or blending the whole with the natural foil of the border to the proper depth, it would form a fine compost, and the trees will profper, and be of long continuance,

But if the foil is naturally fliff and clayey, or of any other stubborn or very moist nature, it may be mellowed by adding dry substances, such as coal ashes, drift sand, road foil, and other fimilar materials, and plenty of rotten dung, working the whole with the natural foil to the above depth.

Where any one is fo happy to poffefs a foil whose natural goodness renders all foreign affiftance unneceffary, no more need be done than digging the borders one or two spades deep, and it is fit for the reception of the trees.

The feafon for planting is October and November, or even any time in open weather till March, in dry warm foils; but in moist or wet foils, we prefer the fpring for that work.

Peach-trees, and, in short, all others that are defigned for walls, should be planted in their places of final destination when they are one year old, that is when their heads are of one fummer's growth from the bud, and with their faid heads entire for the prefent, that we may have the opportunity of training them from their origin, as it were, and in their proper polition in the places where they are finally to remain; for the great art in forming a wall-tree depends entirely upon the due pruning and training the two first years, after making the first shoot or head from the budding

But if any one is in hafte to have his walls covered at once, as it were with bearing trees, he may be supplied with fuch at most of the nurseries, which are what the nurfery-men call trained trees, which they fell from five to ten shillings per tree, according to the forts, fize, and property of growth. Every one may do as they please, but we always preferred those of one year from the bud; for these reasons, first, that trees of that age fooner and more firmly establish their roots, which is an effential point to keep in view; and fecondly, because we would have the tree under our own management from the beginning, which we always found

to be of importance,

The distance these trees should be planted from one another is fifteen feet, and if the walls are high, half or full standards may be planted between the dwarfs, to occupy the upper part, while the dwarfs grow up to fill that fpace; for no part of good walls should

be left unoccupied.

The rule is this, if the walls are not above fix or eight feet high, plant none but dwarfs, and these at fifteen feet distance; if the walls are nine feet high, half standards, of about three or four feet item, may be planted between the dwarfs; and if the walls are ten or twelve feet, or more in height, full standards, of fix feet stem, should be planted to occupy the upper part; and as the dwarfs are to be the principal residents, way must be made, as their branches gradually advance, by cut-ting away the lowermost ones of the standards by degrees annually, and at last, in feven, eight, ten, or more years, as you shall see necessary, the standards may be entirely taken away, that the dwarfs may advance, and fill the whole space of walling.

The mode of planting being fixed on, mark out on the walls the distances

as above for the trees.

Then, having recourse to the nursery, let the trees be taken up with all their roots as entire as possible, for this is of much importance; the extreme ends of all of which should be tipped, i.e. a little shortened, and those of broken or bruifed ones fmoothed, preferving the heads entire for the present, Holes or pits are then to be opened, capacious enough to receive the roots freely Place the tree therein, every way. about three inches from the wall, with the bud outward, and then break and trim in the earth regularly between all the roots and small fibres, and tread the whole gently, to fix the whole plant in its proper position; then directly tack the head to the wall, or tye it to a stake, to secure it from the power of boisterous winds till March, when it is to be headed down.

If the enfuing fpring or beginning of fummer should prove very dry, indulge the trees with moderate waterings once or twice a week, according to the drought and heat of the feafon, which will encourage them to push out more freely and strong after heading down.

The trees being planted with their

first head from the bud entire, as we advised; the next necessary culture is to perform the operation of heading them down, which is to be done just as they begin to shoot, and the proper

time is March.

This work confifts in shortening the head, or first main shoot down within five or fix eyes of the bud, or place of its origin, flopingit off on the fide next the wall, just above an eye, which is a necessary operation, both to dwarfs, half, and full standards, that are planted against walls; that by stopping its upright direction, it may throw out feveral lateral shoots from the remaining lower part to the right and left, and constitute the proper foundation for forming a wall-tree, whose first branches should always proceed on both sides, from within fix inches of the place of inoculation, whether dwarfs for the lower part, or standards for the middle and top of the wall; and that if the heading down was omitted, the consequence would be, the tree would advance with a naked stem, and leave almost one half of the allotted

fpace of walling unoccupied.

Therefore, pay no regard to the first head from the bue, howfoever large and fine it may appear, but out it down as above; for the general formation of the tree depends entirely upon the form acquired by this practice, and the two fucceeding years pruning,

The trees being thus headed down, they will foon after produce one frong shoot from each remaining eye, observing that fuch as proceed immediately from the front and back, are to be constantly rubbed off close, but all those that advance from the two fides are to be preserved entire, which, in June, when of due length to admit of laying in, should be nailed close to the wall, continuing them thereto at full length during the fummer.

At the fall of the leaf following, proceed to give them their first winter

This may be done any time from November till March. You are now to examine the number of shoots each tree produced the preceding fummer from the effect of heading down, and to prune them accordingly; for example, if there are two shoots, one on each fide, they are both to be retained; and to encourage their furnishing a farther fupply of branches; fhorten them to eight or ten, or if of very ftrong growth, to twelve or fifteen inches, and nail them horizontally to the wall.

If there are three shoots, the middle one of them is to be cut out close, and thorten the other two as above, and nail one to each fide in a horizontal direction; but if the middle shoot of the three be confiderably weaker than the other two, it may be retained, and nailed in at full length, which probably will furnish a fruit or two, while the other two are providing a farther necessary supply of wood; but if is it a ftrong shoot, cut it clean away

If the tree is furnished with four shoots, two on each tide, retain them all, and shorten them from ten to fifteen inches, according to their Arength, as above, and nail them equally to the

right and left,

And if there are five shoots, and that those on the fides are strong, and the middle one weak, shorten the former as above, and lay them horizontally, and nail in the middle one entire; but if the latter is nearly of equal strength, or stronger than the others, cut it clean out, which, if left, would draw the principal part of the nourishment, and impoverish those of the two fides, which should now be wholly attended to, for the middle will always furnish itself in due time.

One fundamental rule to be observed, is, that your tree, at this period of growth, should, if possible, proceed with shoots of an equal strength and number on each side, and depends principally upon two or four good branches, shortened & trained equally to the right and left, in a nearly horizontal direction, which will not fail in their turn to furnish you with more to occupy the wall upward.

The trees having had their first year's pruning, observe the following rules in their second year's culture.

During fummer, all shoots that arise from the upper and under fide of the former year's horizontals, are now to be retained and trained entire, and all buds or shoots that proceed immediately from the front and back part of the faid horizontals, should be constantly rubbed off, because they cannot be trained confistent with the necessary form and regularity of the tree, having particular regard, however, to LeteLAB referve all the regular shoots, and train them in at full length; for, except in fome particular instances, the shoots must not be shortened in summer, therefore continue them to the wall entire till the winter pruning.

In November, when the leaves are fallen, or any time betwixt that and the beginning of March, you may proseed to the fecond winter pruning; in performing this, we, for example, will suppose the tree in the first pruning to have been trained with four horizontals, that is, two on each fide, and that each of these produced two or three well-placed shoots the preceding fummer, or as many as to make the tree now possessed of eight, ten, or twelve branches; now, if these stand four, five, or fix on one fide, and as many on the other, it is a happy uni-formity, and all of them are to be refained; and that to procure still a farther supply of horizontals, each of the above are now to be shortened according to its strength; if they are weakly, cut them to fix or eight inches, and if of middling growth to ten or twelve, and if very firong ones to about fifteen or eighteen inches, and train them to the wall horizontally, at fix inches distance, observing that the opposite branches of each fide range exactly in an equal position.

But where it happens that there are an unequal number of shoots, as for instance, sour, five, or fix on one side, and seven, eight, or more on the other, and that they are all of tolerable strength; then, to render both sides nearly equal, some of the weakest and worst placed on the fullest side should

be cut out.

Observe to proceed as near as possible with an equal number and strength of horizontals on both sides, extending the lowest branches the longest, and if your have now five, fix, or eight on a side, trained at five or fix inches distance, your tree will begin to assume a handsome form, and next summer you may expect some fruit.

Previous to the general pruning, obferve, that peach and nectarinetrees always produce their fruit upon the one-year old shoots; that is, the shoots produced each summer bear the fucceeding year, and the same individual shoots rarely bear but once, nor do they surnish good bearing wood af-

ter the first year, so that the grand article in pruning, is to procure an annual succession of these young shoots in every part, from the very bottom to the extremity every way of the tree, which are to be obtained principally by shortening, in winter pruning, those of every year, whereby they surnish, at the same time, both a proper crop of fruit, and supply of bearing wood.

The great art in pruning and training a peach and nectarine tree against wasts, is to preserve uniformity in every part from the beginning, having strick regard that both sides to the right and lest advance with equal strength, and number of horizontals, whose numbers on each side should be equally encreased every year, and those trained constantly in a nearly horizontal position, at five or six inches distance one above another, till by degrees, they cover the whole space of walling allotted for them, both in breadth and height; forthis is very effentially to be observed.

After the tree is thus formed and conducted to a bearing state, its duration, beauty, and fruitfulness depend wholly upon proper pruning every summer and winter.

The general fummer pruning confifts in reforming the irregularity of the numerous shoots then produced, and training to the wall at full length, in every part, all regularly placed ones, as succession-wood for next year's bearing, for the great art is to procure a due supply of these every summer in all parts of the tree.

And the general winter pruning comprehends a general reform among all the branches and shoots of all ages, fizes, and fituation, fuch as the retrenching all worn-out and naked branches, as they from time to time occur to make room for those that furnish the best bearing-wood, shoots of the preceding fummer; at the same time felecting and retaining in every part the best of the faid shoots for next fummer's bearing, cutting out unneceffary and irregular ones, and all ufeless shoots in general, as well as part or the former year's horizontals, to make due room to train the proper ufeful shoots; all of which should be shortened, to promote their emitting laterals in fummer for bearing the year after, and the whole then nailed close to the wall in regular order.

The time to begin the fummer pruning is in May or June. Every one knows that in fpring a peach-tree abounds with a great number of shoots, arifing from every fide of the last year's horizontals or present bearers, probably three times more than are uleful, of than are wanted, or can possibly be trained in without confusion; you must therefore thin them, and ease the tree of all that are irregular, and fuch as are evidently useless and superfluous, at the fame time retaining a fufficiency of the regular shoots; that is, two, three, or four of the fide ones upon each horizontal, to be trained for next year's bearing.

The rule is this: Each of the last year's horizontals will probably produce from three to fix, or more shoots, and of these, some proceed from the upper and under fides, and fome from the back and fore parts; those of the former fituation, viz. from the upper and under fides, are to be regarded as the only proper regular shoots, and are to be principally attended to, retained, and trained in at full length, to prune upon in winter for bearing the succeeding year; but those that proceed directly foreright from the front, and those from the back of the horizontals, or from any of the other parts of the tree in that irregular direction, must be rubbed off close, because, by their fituation on the branches, they cannot be trained with due regularity; therefore, that though good of themselves, they are to be deemed irregular, or useless shoots, and should be every where displaced, except in cases where horizontals furnish no other, when the best placed of them may be retained,

In respect to the regular shoots above described, examine, as you go on, their fituation and number upon each horizontal; if two or more shoots rife from the fame eye, retain only one of them; and if the tree is but a moderate shooter, it is necessary to disburthen it of all that are evidently fuperfluous, which are fuch shoots as, though good and well placed, yet if there are four, five, or more on a horizontal, where only one or two is apparently necessary for next year's bearing, some of the weakest and worst placed, or any remarkably luxuriant ones, should be cleared away, retaining however,

where practicable, always two of the best situated and fairest shoots upon the weak, and three or four on each of the middling and frong horizontals, which, though double, or even treble of what will be apparently wanted, it is eligible culture to referve enough to chuse from in winter pruning, training the whole at full length during fummer.

But where a tree moots very vigoroufly in general, it is adviseable to referve as many of the fide-shoots of each horizontal as there is tolerable room to train at full length, which, by dividing the sap among many, checks luxuriance, which would probably take place in a fmaller number; for the natural inclination of thefe fort of trees should, in some degree, be followed.

Another circumstance to be attended to in thinning & regulating the shoots, is to leave one good shoot at, or as near the end of each bearing horizontal as possible, that it may draw the fay through the whole branch to the nourishment of the fruit.

All weak shoots rising from the old wood must be displaced, unless any regular placed ones appear ufeful to fill a vacancy.

If any remarkably vigorous or luxuriant shoot arise either from the bearing horizontals, or any of the older branches, examine its fituation and firength, and confider whether it is wanted; if it is likely to impoverish the neighbouring shoots of moderate growth, or that it is not immediately wanted to fill a vacancy, cut it out; but if ufeful, either to fill a vacancy, or to prevent an apparent one, or to exhaust too abundant sap, retain it, and pinch it in May or early in June to four or five eyes, and you will procure one middling shoot from each eye the fame year, to train in, to chuse from in the winter pruning.

All those very rank or luxuriant shoots, diftinguished fingularly from the generality of the others of the same tree, by their extraordinary fize, green colour, and often redness at the tips, should be cut out from every part, unless you have no other resource to fill a vacancy, when such that are duly placed for that purpole may be referved and

pinched as above observed.

Attention should aways be had to

the bottom or lower part of the trees, especially those that are aged; if any strong shoot arise in those parts, you must preserve it carefully to succeed worn-out or naked branches, which are cut away by degrees; and if there is a present vacancy, pinch it early in June to sour or five eyes, to surnish lateral shoots the same year, to be ready against the winter pruning.

Where a vacancy or want of wood is discovered, at this time, in any part, and that there is only one shoot where two, three, or more are necessary, four, or sive eyes, in May or early in June, and it will afford as many laterals the same year to fill the vacant

fpace.

In the whole operation of fummer pruning, observe, that all the regular shoots you judge necessary to retain to prune upon in winter, must be left entire, shortening none now, except in cases of vacancy as above, and all irregular and other useless shoots that are now to be taken out, must be rubbed or cut off as close as possible, leaving no flumps, which would shoot out from every eye, and fill the tree with innumerable useless shoots, and choak up and darken the fruit, and deprive it of the necessary benefit of fun, air, showers, &c. and which would require much time to cut out in the winter pruning.

It is necessary to observe, that if the above operations are begun early in fummer, the shoots that are to be displaced may readily be rubbed off with the thumb; but observe, if you delay the work till the wood begins to harden, they will not break off easily without damaging the mother-branch, therefore use the knife, and out them

as close as possible.

After the above regulations, let all the remaining shoots, when of due length, be trained close to the wall unshortened, and as their ends advance, continue to train them still along at full length, and let them remain entire until the winter pruning; for in the common course the shoots must never be shortened in summer.

Title are nearly all the directions we have to advance relative to the fummer pruning; the utility of which, if the operation is performed in due time, is very great both to the tree and fruit.

Therefore, if the operations are begun in May, only just rub off all the ill-placed buds, that is, foreright ones, and those behind the bearing horizontals, and fuch others that are evidently useless, as before observed; and in June, when the ufeful or regular shoots are of proper length, they are easily and expeditiously trained in, for every one points to its proper place; besides, when the work is begun early, it can be performed with confiderably more expedition and truth, as the wieless buds or shoots may then, with the utmost facility, be rubbed off close with the thumb, without the use of any inffrument, and the early operation will contribute very confiderably to the fize and goodness of the fruit, as well as beauty and duration of the trees.

The work however should never be delayed longer than the beginning of June, or till the shoots have attained due length for training in, and not, as is often the case, wait till they are 'two or three feet in length, and form fuch a thicket and confusion, that the most expert pruner would be at a lofs to know where to begin to break through such obscurity, to determine what is necessary to be done, which, besides, is highly prejudicial to the prosperity of the fruit, the main object, as well as to the beauty and duration of the tree; and the confusion occasioned by fuch a thicket of wood and leaves prevents you from cutting close, and the trees become full of disagreeable stumps, producing weeless shoots from every eye, which take up much time to remove in the winter pruning; and upon the whole the fruit being hidden, choaked up, and as it were buried behind fuch a thicket, becomes tender, as is evident from the colour, which is rather white than green, and when thus fuddenly laid open to the air, joined to a scorching fun, great part of it withers and drops off, which never happens when the fruit has from the beginning been inured to the weather, by early rubbing off the ufeless, and training close the useful shoots, fo as to give the sun and air free admission; but on the contrary the fruit always excels in fize, colour, and flavour.

At this time of laying in, or dreffing, that is, June, we recommend the following observation, which could not be so discoverable at the earlier dreffing, viz.

Where short shoots, of an inch or two in length, appear upon this or the former year's horizontals, or sides of the old wood, and that they apparently will not exceed that length, it is of utility to reserve them, at least till the winter pruning, because they may prove natural fruit-spurs, which, at that season, are distinguishable by having a cluster of blossom buds.

If a vacancy is any where discovered early in summer, you may pinch some of the strongest neighbouring shoots to three or four eyes, and they will surnish you shoots the same year, to chuse from in the winter pruning.

Do not pull off any of the leaves at this time, as often practifed, with a view to admit the fun, for these are necessary to the growth, both of the young shoots and fruit, so should never be taken away, unless there is indeed in any part so great a thicket as to darken the fruit considerably, when a sittle thinning may be necessary; in other cases that work must be dispensed with till the fruit are full grown.

After the trees have been summerdressed, according to the preceding directions, you must not forget to review them once a fortnight, to rub off any unnecessary or straggling shoots that may arise, which is soon done, and to fasten up any shoot that may start from its place, or project from the wall, as well as to continue the trained shoots in general thereto, as they adyance in length.

One thing more, which is necessary to observe in the summer dreffing, is the blight which attacks thefe trees: this disorder is the effect of noxious winds, that occasion the curling up of the leaves, which become thick, clammy, yellowish, red, and scabby; and attacks the ends of the shoots, and proves very injurious both to the young shoots and fruit, and often their destruction; for the blighted leaves exhauft the fap, at the expence of all the other parts of the tree. When your trees are first atcacked, there is no other remedy for this accident than to pick off all the curled leaves as foon as discoverable, and also cut off, below the diforder, all the infected part of the shoots, which generally form a tough difagreeable bufh or thicket; this

enables the fap to push out new shoots lower down, for next year's bearing. So destructive is this insection, that it frequently destroys in a short time the whole leaves of a wall of trees; and when these are gone, the principal part of the fruit soon after sollow, which generally withers and drops; as likewise the young wood, for next year's bearing, either dies or becomes stunted. Various other methods have been tried to prevent the spreading of this pessilence, but nothing effectual.

Infects also often prove very injurious to these trees; a sumigating engine lately invented is recommended, in which is burned tobacco, the smoak of which issuing with a perpetual ftream, is applied to the trees attacked by the vermin, which infallibly destroys them, without injury to the trees or fruit.

The winter pruning may be executed any time from the fall of the leaf in November, until the beginning of March; for no weather has any particular effect with regard to proving injurious to the new-cut shoots.

This work however should never be delayed till late in spring, because the blossem buds will be so very turgid or swelled, that numbers of them will be unavoidably rubbed off in performing the operation of pruning and nailing; though some wait till this period, that they may better judge of the good or bad buds, and of the wood-buds from those that produce blossem and fruit. This is of some importance, but the sap is generally risen sufficiently in January, or sooner, to swell the buds, to enable you to distinguish them.

As these trees always bear their fruit upon the one-year old wood; that is, the shoots produced each summer bear the fruit the summer following, so that the fruit-buds are principally to be looked for upon these shoots.

Wood-buds are diftinguishable by their being long and firm; bloffom buds are round, swelling, thick, and fost.

It must be observed that good blosfom buds are always double, two at an eye, having a leaf-bud or shoot between them; those that are single, though they sometimes have a leaf-bud, and blow pretty well, never set sruit so freely as the twin blossoms.

Great

Great attention must always be had to keep every part of the tree well furnished with an annual supply of young wood, of the former fummer, for bearing next year, advancing, as it were, gradually one behind another, from the bottom to the extremity every way; which is eafily-acquired by properly felecting, thinning, and mortening those of every year, and by cutting out annually some of the old horizontals to make room for them. Likewise obferve, that as the bottom of the trees are apt to become naked, be also watchful of that part, to retain in proper places an annual fupply of strong young wood, either to fill an immediate vacancy, or to be trained up gradually to supply the place of any naked or worn-out branch, that may happen either there, in the middle or upper part; which are such that support lit-tle or no young wood, or produce weak and a scanty portion of shoots, and should, wherever they appear, be cut down to the great branch from which they proceed, or to any lower ftrong young shoot they support, or any convenient branch fupporting fuch shoots: and part of the old horizontals must be cut out annually, to make room to train in the bearing wood.

Previous to the performing the opesation of winter pruning, it is eligible to unnail the greater part of the branches, and all the young shoots in general; you then have full liberty to examine the flate and fituation of the whole, as well as to have due com-mand in using your knife, and nailing the tree again in regular order, according to the fituation and strength of the general supply of young shoots necessary to be trained for next fum-

mer's bearing, &c.

The trees being unnailed as above, you should first proceed to examine all the principal branches, and see if any are become naked, or worn out. Naked branches are fuch that, as formerly hinted, have advanced a confiderable length, and support very little or no good bearing shoots, or lateral branches furnished with such wood, and should be cut out to their origin, provided there are proper young wood, or horizontals, well furnished with fuch shoots, properly situated to be trained up to supply their places; for way must always be made for those

branches that furnish the best young wood, both for bearing the following fummer, and providing a further fupply of shoots for future fervice. the worn-out branches are eafily diftinguished by their uncommonly weak fhooting, fo should be cut out as above, to make room to extend those of bet-

ter growth.

From these you pass to regulate the fnoots of the year; of which you will find often, on the fame tree, weak ones, middle-fized ones, and fome of very luxuriant growth; those of the middle-fize are to be principally attended to; observing, as noticed in the summer pruning, that the proper shoots for our present purpose to train for next fummer's bearing, are principally those that grow upon the one-year old horizontals, and of which we are now to select and retain the most regular placed ones, namely, fuch as are the most properly fituated for training close and neatly to the wall, which are chiefly those that proceed from the two fides of the faid horizontals, fo that keeping those in view for training, clear away all the irregular and other useless shoots, as hereunder mentioned.

Suppose your tree to be chiefly of moderate growth, and here and there in it shoots of superior luxuriance and rankness; these, where-ever situated, must be cut out close: but if the tree is in general vigorous or luxuriant, the shoots must only be thinned in a

moderate way, as hereafter directed.

All shoots of extreme weakness should be cut away, unless you shall fee it necessary to keep one here and there to fill a vacancy, or as a referve in case of one the suture year, iu which latter case I would cut them down to an eye or two.

I do not comprehend by weak shoots those short ones an inch or two long, which I call natural fruit-spurs, and often furnish excellent fruit. These often furnish excellent fruit.

must be retained.

All foreright shoots, and such that proceed directly from the back of the branches, and in other irregular directions, that cannot be trained confiftent with the uniformity of the tree, and those arising from the old wood, are also to be cut off close, except in cases of vacancy, and that there is no other refource.

Cut away all flumps of last fummer,

and leave none now, cutting every

During the whole operation of the above reforms, great attention must be observed in selecting and retaining all the well-placed regular side-shoots above described, which must next be regulated according to the following

rules.

Having in this manner cleared your tree from worn-out branches, and from luxuriant, irregular, and other had shoots, there is nothing left but useful branches supporting horizontals, furnished with proper young wood, nearly of equal strength, and you see your work clear; you have nothing now to do but select and retain upon each horizontal a due portion of the best placed of these proper shoots, and retrench the supersuous ones.

Examine therefore the number of proper shoots upon each horizontal, and their strength, keeping in mind, that the middling strong ones are to be principally attended to. We advised in the summer pruning to leave upon each horizontal two, three, or four shoots, according to the strength of the tree in general: now, if your tree is fully trained, no more than one or two, as you shall see necessary, need by the less upon each horizontal except be left upon each horizontal, except in cases where a tree is very luxuriant, or where there is a very wide space to fill, or a vacancy in its neighbourhood; but if the tree is still in training, you may retain two or more shoots upon each bearer, as you shall judge expedient, to forward the tree to its intended form. But suppose you are upon a Still trained tree, or such that are nearly to, and that you judge one of the young fhoots on each horizontal (ufficient, keeping in view they should be trained about five, fix, or feven inches diffance; on this confideration you are to felect the best of the lowermost of these shoots, unless you shall judge necessary to advance the length of the branch; then chuse the best of the uppermost, observing that whatsoever shoot you fix upon, to cut off the upper part of the horizontal on which it stands, close to the faid shoot, or if you leave two or more shoots upon each horizontal, let one be near the upper, and the other near the lower part thereof, on the opposite fides, and cut down the horizontal to the uppermost of the two Vol. II.

shoots, so that by cutting away part of each of the former year's horizontal, the temaining part is terminated by a young shoot, which now commences the bearer or horizontal of the ensuing year.

Observe, where two or more shoots arise from the same eye, never leave

but one.

Where any shoots rise from the sides of the old wood or main branches, and which you shall judge necessary to retain, either to fill a present vacancy, or to be ready for an apparent one, it may be reserved without shortening down the said branch to it, as is necessary in the one year's horizontals, unless that part of the said branch immediately from the shoot upward is naked, or unsurnished with young wood, in which case take it down to the shoot in question.

Those short shoots or natural spurs, an inch or two long, above observed, may be retained wherever they appear, for they are generally well furnished

with bloffom buds.

Observe, that many of the principal bearing shoots which you now retain, will have probably put out several small twigs or fide shoots; these, being produced late, are generally spongy, besides, being superfluous or unnecessary, must be cut close, leaving only the main shoot.

In cutting out the irregular and superfluous wood in general, cut all close, leaving no stump, which wou'd fend out shoots from every eye the ensuing summer, and crowd your tree with useless wood; and any of those short natural spurs of the former year, now devoid of blossom buds, or that exceed two or three inches in length, should now also be cut away close, but especially those that advance cirectly foreright.

After making these reforms of regulating and thinning, we proceed to consider of shortening the remaining select shoots, the utility of which is obvious; for as these trees always produce their fruit upon the one-year old shoots, the same wood, by proper shortening in winter pruning, surnishes, as well as fruit, lateral shoots the following summer, to bear the fruit the year after that; therefore, to procure an annual supply of young wood in the proper parts, we must not omit

flopping or shortening that of each year in the winter pruning, by which each shoot will emit two, three, or more lateral ones the fucceeding fummer; whereas, if they were left at full length, the fap which would have thrown out shoots below, would mount to the extremities, and leave the bottom bare, and in a short time all the lower part of the tree would become naked, and furnished with bearing wood only towards the extreme parts. The rule of shortening is this; if the tree is in health, and of a middling free growth, shorten or cut off about one-third of the length of each shoot; for instance, shoots of ten or twelve inches should be shortened to fix or eight; those of about fifteen or eighteen inches fhorten to eight, ten, or twelve; and so in proportion to the length and substance of the respective shoots, observing, where a tree is weak, or on the decline, and makes weakly shoots, to leave the shoots thin, and cut them fhorter in proportion: on the contrary, where a tree is in general a vigorous shooter, leave the shoots close, and fhorten them moderately, which by retaining a good deal of wood to divide and exhauft the great redundancy of fap, is the only means to reduce a luxuriant tree to a state of moderate growth, and to bear plentifully.
In shortening these shoots, it

importance to cut them just above a wood, or branch-bud, that it may produce a shoot for a leader, to draw the sap through the whole horizontal, the more effectually to nourish its respective fruit. A wood bud is with facility distinguished from a blossom-bud; the former is long, narrow, and firm, the bloffom-buds are roundish, thick, fwelling, and fost; so that by cutting to a wood bud you are fure of a leading shoot, and the fruit will be well nourished; but where two bloffombuds appear on the same eye, a wood-bud also generally issues from between, fo that if you cannot conveniently cut to a wood-bud, make the cut to a twin bloffom-bud as above.

Thus much for the general directions to be observed in the principal winter pruning, although there are other circumstances that cannot be conveyed by words, nor judged of but upon the fpot, which depend chiefly

upon practice.

We will however subjoin a few other particulars very necessary to be observed.

In the course of practice, you will meet with trees of very different habits of growth; fome, for inftance, are weakly, and produce small or weak shoots; others, of a middling state, shoot freely in every part, but not too vigorous, which is the most defireable flate of growth of any; and fome fhoot very vigorous in almost every part. With respect to the former, if the tree makes very weak shoots, examine whether the difease is at the root; if it is, pull it up; if not, preserve it, and dig in rotten dung, which often recovers these fort of trees, observing to keep it thin of wood, and prune the shoots short, and even the best to five or fix inches, till it recovers. In the second case, the middling shooting tree is to be managed as in the general directions. And in the third instance, if the tree be remarkably vogorous, and bear little, it should in some degree be humoured in its own way; for if you cut out many, and shorten considerably the remainder of thefe very vigorous shoots, where they are general, as is frequently done without mercy, fuppofing by that practice to check luxuriance, and so continue to prune, and depend entirely upon the smallest ones, the consequence is, that by much thinning, and close cutting vigorous trees, they continue to shoot still with greater vigour and irregularity for feveral years, without being able to gain either form or fruit, till at last, by severe pruning, they pass into the oppofite extreme, become, as it were, tired with acting ineffectually, grow weak & fickly, and shoot no more. On the contrary, by following, in some degree, the inclination of the tree, leaving the shoots as close as there is any tolerable room to lay them in, and shortening them very little, fome of the strongest not at all; and by thus leaving a good deal of wood, and that at a confiderable length, the fap is divided, and the luxuriance is checked; and in a year or two your tree will become a moderate (hooter, and furnish fine young wood, and bear plentifully.

The trees being pruned, they should be directly [nailed to the wall; as you go on, that is, as foon as one tree is pruned, let that be nailed before you prune another,

Peach-trees come into bloffom early in fpring, when cutting frofts prevail, which, in fome feafons, is so severe as to cut off the whole. Not only the bloffom is liable to this disafter, but also the young fruit, till they are as large as ordinary cherries, which oblige us to have recourse to all possible means to defend them.

The dangerous time lasts a month or fix weeks; various ways have been tried to shield the trees during that period; fome cover with large garden mats, which are often found of great use; but where there is much walling, it takes up much time to cover and uncover, as the danger threatens, for they must only be used when there is apparent danger: free air and light must be admitted, so that if the mats are nailed up in an evening when there is an appearance of a cutting froft, they should be removed again in the morning, if the weather is quite mild; but if not, they may be permitted to remain till it is: do not omit however to take them down when the weather changes; and fo continue their use only occasionally, till your fruit are as big as large peas at leaft.

This is the principal expedient in practice to defend these trees, which, after all, sometimes does not secure a quarter of a crop; it however should not be omitted in hazardous times, especially to some of the early and choice sorts.

There is another method which we have fometimes experienced to fave a few fruit, when all that were fully exposed were cut off: this is to procure a quantity of cuttings from the branches of evergreen trees, such as those of laurel, yew, spruce-fir, &c. and stick them moderately thick between the branches of the peach-tree, so that the leaves of the cuttings cover the blossom; these should be placed when the blossoms begin to open, not too thick to darken it, and may be permitted to remain until the beginning of May, when the fruit will be set, and past danger. In default of the above cuttings, branches of dried fern may be used.

Neither of these methods of covering, nor indeed any other, can we recommend as generally effectual; but a poor expedient is better than none; they often insure a few fruit, when those that are fully exposed are all de stroyed by the frost.

In favourable feafons peach and nectarine-trees fometimes fet their fruit very thick in every part, often double or treble the quantity that have room to grow, or the trees capable of nourithing, and frequently the fruit are fet only here and there in clusters; in either case they must be thinned, otherwise the fruit will not attain half its common size, and during their growth would thrust one another off; besides, if the trees are overloaded, they would produce but very weakly shoots for next year's bearing, and would be two years before they recovered themselves.

This work should be performed when the fruit have attained nearly the fize of small cherries, which will be some time in May, for if you thin them sooner, frosts may destroy the remainder, and you have no resource left.

The rule of thinning is, if the tree is weak the fruit must be left thin, not more than one or two on the larger shoots, and none upon the small ones, which is the only way to infure wood for another year: upon trees of a middling strong growth you should retain but one fruit upon the smaller shoots, and two upon the middling fized ones, and three upon the strong shoots : but the smallest kinds of fruit may be left a little thicker in proportion, and the large forts should be thinner, i. e. about fix inches diftant upon each shoot, and the largest of all eight or ten. In performing this work, observe to select and retain the best placed, largest, and fairest fruit, in every part, according to the above rule; and in removing the fuperabundant ones, be careful not to diffurb thefe. Leave no where two or more upon the same eye, especially if one exceeds the other in fize, taking off the smallest, which the other would starve; but if they are of equal fize, you may, if it shall seem necessary, leave both of them.

We formerly observed, that it was of utility to preserve a slight coverture of the leaves of the tree, by way of shade to the fruit during their growth, and until they begin to change colour: when they have attained that shate of perfection, it is necessary to pinch off a few of the leaves that immediately cover the fruit, to admit the sun to give it colour and slavour.

Do this however regularly, and thin the leaves by degrees, which should be pinched, and not torn off, which would mangle the eyes, and prevent the fruit buds from forming themselves for next

Peach-trees, from the time of heading down to the fixth or feventh year, may be faid to be in a ftate of training, though they frequently begin to bear the fecond or third year after the operation of heading down; and in five, fix, or feven years will bear pretty plentifully, according to their fize, for they will not have attained their full growth till they are ten, twelve, or fifteen years old, according to the extent of walling they have to cover, at which age they will be arrived at the beginning of their ultimate state of vigour and perfection of bearing, which they generally acquire between the seventh and fifteenth year, and in which they will continue for twenty or thirty years to come; for these trees, with due management, will endure fifty or fixty years, provided no accident happen, fuch as violent blights, or tainted with gum, or attacked by vermin; fo that the opinion of some, that peachtrees are feldom of more than twelve or fifteen years duration, is erroneous, and must be given up, for it is owing only to bad management that they do not last as long as other fruit-trees.

The trees may be faid to be in their third state when they begin to decline through age; but if our general directions in pruning are observed, this feldom happens until they are upwards of thirty or forty years old, when they should be cherished by leaving only the best young shoots, and that moderately thin, and which should be pruned shorter than the general rules. Make the most of strong young wood that rifes from or near the bottom, to fupply the place of worn-out branches.

When it is observed any trees approach near their end, and the bottom of the walls become naked, young trees should be planted in due time in the spaces between the old ones to succeed them, and as they shoot up lop off the lower branches of the old trees, which in four or five years may be taken entirely away; thus you may keep your walls always occupied, without intermission.

It fometimes happens that the trees

do not bear fruit of the approved or defired fort, which is often the mortifying circumstance when purchased in fome nurferies, and a very cruel one, after all the trouble of training, &c. To remedy this you, in August, may bud some of the young shoots of the fame year, in different parts of the tree, and as these advance, cut the other parts away, and in two or three years they will spread considerably, and bear fruit.

If the gum has attacked any shoot of a tree, young or old, cut it off an inch below, to stop the communication, and prevent killing the whole shoot,

The utility of tillage to these trees is very obvious, and should be performed every autumn and spring.

Dung, in moderation, is also of the utmost utility in preserving due vigour and health in these trees, and to promote the fize of the fruit; let it be perfectly rotten, and added every two or three years, fpreading it all over the border, and dig it in in the usual way.

As to cultivating kitchen herbage on the borders, the moderate growing forts, such as radishes, lettuce, small fallad herbs, kidney-beans, a few small early mazagan beans, peas, &c. do very little or no injury to the trees.

Peach and nectarine-trees are often planted in forcing-frames and hotwalls, to produce early fruit; the forts proper for this are the earliest

There are two varieties of peachtrees that are effeemed chiefly by way of curiofity and ornament, which we judge it most proper to speak of under a separate head. These are, the

Double bloffomed peach-tree; and

Dwarf peach-tree. The former of thefe has great beauty

in its double flowers; it attains the height of common peach-trees, and differs in nothing from them but in the doubleness of its flowers, which, like those of the others, are succeeded by fruit : the tree make a fine appearance

in ornamental plantations.

The dwarf peach rifes but two or three feet high; the stem is small, and hath very flender branches, which produce small insipid fruit, the fize of a nutmeg. It is fometimes planted in pots, and brought to table with the fruit upon for curiofity, and makes a fingular appearance.

For purposes of ornament, any of the forts of peach-trees may, with propriety, be admitted as standards in the shrubbery, and will make a fine appearance when in bloom; and if they stand in a sheltered situation, there will be a chance of having now and then some fruit from them: they may either be planted as flandard-dwarfs, or as half or common flandards.

The propagation of the double bloffomed and dwarf kind is effected by budding, the same as common

peach-trees.

The nectarine and peach-trees have been generally confidered as diffinct fpecies, principally by the difference of their fruit; but late discoveries has determined otherwise, and that they are found to be varieties of one another, but which is the original is not yet agreed on; but certain it is, that there have been instances of nectarines growing naturally on peachtrees, accompanied by peaches on the fame branch; which very fingular phœnomenon determines them to be varicties of one species.

Neither the trees, by their manner of growth, the wood, leaves, nor flowers of nectarines and peaches, can with any precision be distinguished from one another; but the fruit is diftinguishable at fight in all its stages of growth: that of the nectarine hath a smooth firm skin or rind, and the peach is covered with a foft downy matter; the fiesh too or pulp of the nectarine is confiderably firmer than that of peaches.

See NECTARINE.

WOLF-PEACH, [Lycoperficon.]

Love-Apple, see Love-Apple.

PEACOCK, [Pavo.] In ornithology, a genus of birds, of the order of the gallinæ, the characters of which are these: there are four toes on each foot, and the head is ornamented with an erect crest of feathers.

PEARL, [Margarita.] in natural history, a hard, white, shining body, usually roundish, found in a testacious in natural

fish resembling an oyster.

Pearls, though efteemed of the number of gems by our jewellers, and highly valued, not only at this time, but in all ages, proceed only from a distemper in the creature that produces them, analogous to the bezoars, and other stony concretions in several animals of other kinds; and what the

antients imagined to be a drop of dew concreted into a pearl in the body of the pearl-fish, which they supposed role from the bottom to the furface of the water to receive it, is nothing more than the matter destined to form and enlarge the shell, bursting from the veffels destined to carry it to the parts of the shell it would have formed, and by that means producing these

little concretions.

The fifth in which these are usually produced is the East-India pearl-oyster, as it is commonly called; it has a very large and broad shell of the bivalvekind, fometimes measuring twelve or fourteen inches over, but those of eight inches are more frequent: it is not very deep; on the outfide it is of a dutky brown, and within of a very beautiful white, with tinges of feveral other colours, as exposed in different directions to the light. Befides this shell, there are many others that are found to produce pearls; as the common oy-fter, the muscle, the pinna marina, and several others, the pearls of which are often very good, but those of the true Indian burberi, or pearl-oyster, are in general superior to all. fmall or feed pearls, also called ounce pearls, from their being fold by the ounce, and not by tale, are vaftly the most numerous and common; but as in diamonds, among the multitudes of small ones, there are smaller numbers of larger found, so in pearls there are larger and larger kinds; but as they increase in fize, they are proportionably less frequent, and this is one reason of their great price.

Artificial PEARLS. Are made by reducing feed pearls to a paste, by means of a chemical preparation called mercurial water, making the beads in filver moulds, boring them with a hog's briftle, and drying them in a closed

glass in the fun.

Beads, in imitation of pearls, are alfo made of wax, and covered with the scales of several kinds of fishes.

PEAR-TREE, [Pyrus.] There is only one species of this tree, but it comprehends almost endless varieties, which furnish fruit for use from the beginning of July until May or June the next year. We shall confine ourselves to a lift of the most valuable, arranged in three claffes; fummer-pears, autumn-pears, and winter-pears

Summer

Summer-Pears are fuch as ripen from the beginning or middle of July until the middle or latter end of September, and continue but a short time in persection : some of the earliest sorts keep good only a few days before they become mealy and rotten; and very few of the forts will last much above a fortnight; but by having different varieties the succession may be continued two months or ten weeks, till fucceeded by the autumnal forts, which will continue in eating from the end of September till Christmas.

Little Mulk-Pear. A fmall roundish yellow pear of a musky flavour, valuable for its early perfection: ripe

beginning or middle of July. Green Chiffel Pear. A fmallish, nearly oblong, light-green pear, melting, very juicy, and agreeably flavoured; ripe the middle or end of July.

Red Mufcadelle, or Fairest Supreme A middle-fized, beautiful, red-striped and yellow pear, fomewhat firm, breaking juicy and rich flavoured; ripe the end of July and the beginning of August.

Jargonelle Pear, commonly so called, but is properly Cuisse Madam, or Lady's thigh. A largish, long, pyramidal, ruffetty-green pear: ripe begin-ning or middle of August.

Cuiffe Madam Pear, commonly fo called, but is properly the Jargonelle. A fine large oblong, smooth, yellowishgreen pear, fometimes reddened next the fun, having a firm pulp, tolerably juicy, and agreeably relished, though not high flavoured, and is apt to being a large handsome fruit, and the tree a remarkably good bearer; it highly merits culture, particularly for the supply of markets; and for which purpose it is greatly cultivated about London: ripe towards the middle of August.

Windfor Pear. A large oblongish pear, swelling considerably towards the crown, of a greenish-yellow colour, having a fostish pulp, but soon be-comes mealy: ripe middle or end of

August.

This fort and the former bear a great resemblance to each other, but this is rather shorter and more swelling towards the crown,

Great Blanquette Pear. A large roundish, yellowish-green, smooth pear, having a fost juicy fiesh of a rich flavour: tipe beginning or middle of

Little Blanquette Pear. A small, roundish, smooth, yellowish-green pear: ripe middle or end of August.

Early Ruffelet Pear. A middle fized, oblong, reddish pear, melting, and re-plete with sugary juice: ripe about the middle of August.

Musk Robine, or Queen's Pear. fmall roundifh, top-fhaped, yellowifh-coloured pear, tender, fweet, and mufky: ripe middle or end of August.

Red Orange Pear. A middle-fized, globular pear, reddened on the funny fide, the other green, melting and richly flavoured: ripe end of August.

Perfumed Pear. A middling, round-ish, deep-red pear, spotted with brown, having a melting perfumed fielh: ripe end of August. Orange Musk Pear. A large, round,

yellow pear, very good if eaten from the tree, as foon as a little ripe: it ripens in the end of August.

August Muscat, or Poyal Pear. largish, globular, whitish-yellow pear, breaking fugary and perfumed, and one of the finest pears of the feafon: ripe end of August.

Onion Pear. A middle-fized, glo-bular, brown-skinned pear: ripe end A middle-fized, glo-

of August.

Salviati Pear. A largish, globular, flatted pear, reddish and yellow to the fun, and whitish on the other side, tender and agreeably slavoured: ripe beginning of September.

Red Admirable Pear. A large globular pear, crimfon-coloured on the funny-side: ripe in September.

Summer Bon Chretian, or Good Christian. A fine, large, oblong pear, beautifully reddened next the fun, and whitish on the other side, breaking and highly flavoured: ripe beginning of September.

Rofe Water Pear. A middle-fized, globular, brownish red, rough pear, breaking and finely flavoured: ripe middle of September. Summer Bergamot Pear. A largish,

round-flatted, greenish-yellow pear, melting and sugary: ripe middle of September.

Varieties. There are two or three varieties of this fort that differ in fize, but are all of the Bergamot shape.

Orange Bergamot Pear, A largish

dilling A

round-flatted, greenish-yellow pear, reddish next the sun, breaking and replete with persumed juice: ripe towards the end of September.

Other Summer Pears of less note are known by the following names; Catharine Pear —St. James's Pear

Catharine Pear,—St. James's Po Crawford Pear,—Citron Pear, s Pear-Piper, Brute Pear, Mulkdrone Pear,
Lemon Pear, Green Mulk Pear,
Long stalked Blanquette Pear.
All the kinds of Summer pears ripen

on the trees fit for eating, but mould

be gathered before they are too ripe.

Autumnal Pears.

Autumn pears are fuch as attain their full growth on the trees from about the middle or end of September till the end of October; and which after being gathered gradually mellow and improve in flavour, and will keep fome a month, others fix weeks, and some two months or longer; being in eating principally in October, November, and December.

Autumn Bergamot Pear. A middle fized, roundish, flatted, yellowish-green pear, faintly reddening next the fun, melting, and of a richly perfumed flavour: ripe end of September or beginning of October, continuing good until the end of November. Swifs Bergamot Pear, A middle-

Swifs Bergamot Pear, A middle-fized, roundifh, greenish Pear, finely ftriped with red, melting and tolerably well flavoured : ripe the end of September, continuing in eating till No-

vember.

Great Ruffelet Pear. A jarge oblong brown and reddish pear, sometimes spotted, having a tender rich pulp: ripe middle or end of September.

Brown Beurre, or Beurre de Roy Pear. A fine, large, oblong, ruffetty, brown and greenish pear, very melting, juicy, and sugary, and is one of the finest pears of the autumn: ripe beginning of October, and keeps good till December.

White Beurre Pear. A large, round-ish, top-shaped, whitish-yellow pear, melting, very julcy and good: tipe beginning of October, and keeps till November.

Red Beurre Pear. A large, oblong, reddish pear, melting and very fine: ripe beginning of October.

Green Sugar Pear. A middle-fized, top-shaped, smooth, green pear, full of a rich fugary juice; ripe end of Ocsober, and keeps good all November.

Monfieur John Pear. A largish nearly round, swelling, brown pear with a rough skin, having a breaking delicious pulp: ripe end of October, continuing in pertection all November and part of December.

Crefane Pear, A large, fomewhat

globular, flatted, greenish-yellow, ruffety pear, hollowed at the top, is re-markably tender and fweet, and may be ranked as the finest pear of the sea-son: ripe end of October, keeping good till December.

Swann's-egg pear. A moderately large, egg-shaped, dusky-green pear, brownish next the sun, is very juice and agreeably flavoured: ripe end of October, continuing in tolerable perfection till near Christmas.

Verte Longue, Long-Green Pear, or Autumn Mouth-water. A large, long, very green pear, is melting and juicy: ripe in October, and continues till December.

Marquis's Pear. A fine large, swelling, flat-topped, greenish-yellow pear, faintly spotted with red, baving a tender good pulp; is in eating in November and December.

Grey Good-wife Pear. A middle-fized, roundish, brownish-red pear, moderately tender and well-flavoured: is in eating from the end of October till December.

Rousseline Pear, or Long-stalked, late Autumnal Muscat. A large, oblong, long-stalked pear, reddish on the sunny side, is tender, and of a musky flavour: in eating in the end of Oc-tober and part of November.

Muscat Fleury Pear. A smallish globular, brownish-red, long-stalked

Pear, tender and high-flavoured: in eating from October till December.

Twice flowering Pear-tree, It ofte produces bloffom twice a year, the first in the fpring, and the fecond in autumn, fo is preferved in many gardens

as a curiofity.

Other less material autumnal pears are-Befideri Pear.-Dean's Pear. Vicar's Pear.—Vine Pear.—Autumn Rofe Pear.—French Bergamot.—— Beurre Bergamot.-Knave's Pear.-Burnt Cat Pear .- Pound Pear, very

All the autumn pears should have their full growth on the tree, but not hang till quite ripe, which is the end of September and in October, being their feason of full growth,

Winter Pears.

Winter pears arrive to full growth vember, but do not attain maturity for eating until they have lain fome confiderable time in the house, some a month or fix weeks, others two or three months or more, before they ripen, as observed below in their deferiptions, so that they succeed one

feriptions, so that they succeed one another in perfection generally from about December until May.

By the winter pears being so long acquiring perfection after gathered from the tree, many persons have thought them fit only for culinary uses; but most of the following are very fine eating pears, after having lain the proper time to mellow.

St. Germain Pear, A large long yel-

St. Germain Pear, A large long yel-lowish-green, extraordinary fine pear, of the melting sugary kind: in eating from December until February.

Chaumontelle Pear. A large oblong pear, having one fide purplish, the other of a whitish-green colour, is melting, of a very rich delicious flavour: in eating from December until March or April.

Martin Sec, or Dry Martin Pear.

A large, oblong, ruffety-reddift pear, is breaking, fomewhat dry, but of a fine perfumed flavour: in eating end of November, December, and January.

Colmar Pear. A large fwelling,

flat-topped, greenish-yellow pear, spot-ted with yellow; is tender and exceed-ingly sine slavoured: in eating from December till January or February. Spanish Bon Chretien. A large py-ramidal purple and yellow pear, having

many dark fpots on the purple fide; is a fine winter pear, ready for eating the end of December, continues good

near two months,

Virgoleuse Pear. A large, oblong, greenish - yellow pear, sometimes brownish next the sun, is an excellent fruit: in eating from the beginning or middle of December until the end of

Dauphine Pear. A middle-fized, roundifh, top-fhaped, fmooth, yellowifh-green pear, having a melting, fugary, mulky pulp: in eating the end of No

vember, continuing in perfection all December and most part of January, Winter Verte Longue Pear. A longish, green coloured, smooth, spotted exceeding good pear : in eating the end of December and January, &c.

Winter Beurre Pear. A fmallifh,

Winter Beurre Pear. A smallish, oblong, yellowish, red-spotted, very fine pear; ready for eating in December and January.

Winter Thorn Pear. A large, long, pyramidal whitish-green pear; is melting, and in fine eating from December till February.

Martin Sire, or Lord Martin Pear, A large, roundish, irregularly-swelling, smooth pear, ted on one side, the other yellow; is breaking, and of a persumed slavour: in eating in December and January.

Winter Bergamot Pear. A middle-

ber and January.

Winter Bergamot Pear. A middlefized, roundilh, greenith-yellow pear:
in eating from the end of November
until the fpring.

Hollond's Bergamot. A large,
round, greenith pear, having a tender
rich pulp: in eating from January till
April

Winter Bon Chretien. A very large, long pyramidal, yellowith-green pe having often an uneven furface; breaking, very juicy, remarkably fweet and rich flavoured, and often proves the best winter pear in the collection: in eating from February till April or

in eating from February till April or May.

German Muscat Pear, A middle-fized, oblong, ruffety-red pear, having a melting rich pulp: in eating from February till May or longer.

Easter Bergamot Pear. A large, roundish, stat-topped, greenish pear, having many rough spots, is of the breaking kind; and is in eating from February till April or May.

Winter Ruffelet Pear. A middle-fized, longish pear, red on one side, the other of a greenish-yellow, is melting and agreeably relished: in eating in January, March, &c.

St. Martial Pear. A longish, oblong, smooth pear, one side purple, the

long, smooth pear, one side purple, the other yellow; having a buttery rich field: in eating from February till May

or June. Cadillac Pear. A very large, roundish, red and yellow pear, having a hard, four, pulp, but is excellent for baking and other culinary purposes: in use from November or December till May.

Union Pear, or Uvedale's St. Germain. A large, long, deep-green pear, reddift on one fide, having a hard, four, pulp, but is excellent for baking, &c. in perfection from November of December till May or longer.

Black Pear of Worcester, or Parkinson's Warden. A remarkably large,
oblong, dusky brown, rough pear, hawing a hard austers pulp, but it very
fine for culinary uses, from November
till Margh or April.

Double Flowered Pear. The tree
produces double flowers succeeded by
a large, short, yellowish and red pear,
rather hard and austere; but is remarkably size for baking, arc.

Other less marged.

Other left material varieties of winter pears are known by the following names.—Good Lewis, a large, long-aith pear.—Ambrette, a large roundith pear.—Thick-stalked Pear, a very large roundith fruit.—Amsdot, a middle-sized oblong pear.—St. Austin, a middling oblong pear.—St. Austin, a middling oblong pear.—Chassey, a targe oblong pear.—Chassey, a targe oblong pear.—Chassey, a targe oblong pear.—Iron-coloured Pear, a middle-sized oblong fruit.—Golden Winter Pear, a large globular fruit.—Villain of Anjou, a large roundish pear.—Winter Russelte, a middle-sized longish pear.—Carmelite, a middle-sized longish pear for kitchen uses.—Winter Citron-shaped Pear, for baking.—Blood Pear, for baking, ac.—English. Warden, a large pear for baking and other culinary uses.

There are many other varieties of pears of loss account, both of summer, antumn, and winter kinds, that are unnecessary to infert here; and indeed it would be almost impossible to discriminate the various sorts of hard pears, and others of little note, found in the orchards and gardens in country villages and about farm-houses, in different parts of England, &c.

Aut as the varieties described in the above three lifts are of known merit, Other left material varieties of win-

and about farm-houses, in different parts of England, &c.

But as the varieties described in the above three lifts are of known merit, and are cultivated in most of the nurferies for sale, by the names here prefixed to each kind, consisting of near fixty different forts, they are more than sufficient to surnish the most extensive garden with a copious variety of pears, almost the year cound.

All the varieties of this tree are hardy and will succeed in any common foil of a garden or orchard, both as dwarfs for walls and espaliers, &c. and in standards of all forts; and in all of which modes of training they will bear plentifully, it is however of importance to allot a good wall and espalier for some of the shoicer kinds, both summer, autumnal, and winter pears, fummer, autumnal, and winter pears, Vol. II.

in order both to forward the growth of the fruit and to improve its fize, beauty and flavour: a fouth, eaft, and wefterly wall are the proper exposures, and it is eligible to plant fome in each of those afpects, to vary the times of ripening, though most of the summer pears will succeed very well in almost any aspect and if some are planted also against a north-well, they will ripen later; and continue the succession of any approved forts longer in eating; but it is particularly necessary to allow all the sime forts of winter pears an east or well wall, or a well-exposed ofpalier, otherwise they will not perfect their fruit kindly in unfavourable feasons; in estimated all the forts of pears attain great perfection, and the espailers may be averaged round the quarters of the kill-chen-garden, or in any other free fitheration where the foil is of similar quality.

Remarking, that these trees, both in order both to forward the growth of

ation where quality.

Remarking, that thefe trees, both against walls and espatiers, should generally be allowed a getat deal of room to spread, for by having full scope they will extend their branches more than twenty feet on each side of the firm, and the whole will fentitimes form a spread of forty or fifty feet, with height in proportion,

and the whole will fornetimes form a foread of forty or fifty feet, with height is proportion,

Standards of forme forts of pears are also naturally of a very spreading growth, others grow more upright.

However, in all the method of training these trees, it is highly requisite to allow them sufficient room to spread to their full extent, and their branches should be suffered to extend themselves always at full length; for pear-trees should never be shortened, except sin the first or second year, sec. to distain a supply of lateral branches will because as they always bear their blossom and fruit upon short spurs arilling from the adds of the branches; sinth however, towards the extreme parts, then by digress all slong the sides almost from everywe, that short ening would cut away the first fruitful parts, and thus by stopping steir progress of shooting in length it would farce out strong stoots from all the eyes, and prevent their forming spurior fruit-huds; but being trained at full length they shoot moderately, and in two or three years naturally form.

fhort spurs of from about half an inch to an inch or two long, the same branch and spurs continuing fruitful a

great number of years.

But it must be observed, that peartrees are generally several years before they attain any tolerable bearing state, for the branches seldom begin to sorm fruit-spurs till they are from about two or three, to sour or five years old; at that age, however, they sometimes begin to bear, but never any general crop till they are eight or ten years old.

that age, however, they fometimes begin to bear, but never any general crop till they are eight or ten years old.

Pear-trees are propagated by grafting and budding upon any kinds of pear-flocks; also occasionally upon quince-flocks, and fometimes upon white-thorn stocks, but pear-stocks are greatly preserable to all others for general use. See Argle-Trees, Espanziluse. Grafting. Pruning. &c.

In the gathering of pears, great regard should be had to the bud which is formed at the bottom of the footstalk, for the next year's blossoms, which, by forcing of the pear before it be mature, is many times spoiled; for while the fruit is growing, there is always a bud formed by the side of the footstalk upon the same spur, for the next year's fruit; so that when the pears are ripe, if they are gently turned upward, the sootstalk will readily part from the spur, without injuring of the bud,

The feafon for gathering all summer pears is just as they ripen, for none of these will remain good above a day or two after they are taken from the tree; nor will many of the autumn pears keep good above ten days or a fortnight, after they are gathered. But the vinter fruits should hang as long upon the trees as the season will permit, for they must not receive the frost, which will cause them to rot, and render their juices shat and ill tasted; but if the weather continue mild until the end of October, it will then be a good season for gathering them in, which must always be done in dry weather, and when the trees are persectly dry.

In the doing of this you ought carefully to avoid bruifing them, therefore you should have a broad flat basket to lay them in as they are gathered; and when they are carried into the store-room, they should be taken out fingly, and each fort laid up in a close heap,

on a dry place, in order to fweat, where they may remain for ten days or a fortnight, during which time the windows should be open to admit the air, in order to carry off all the moifture which is perspired from the fruit; after this, the pears should be taken singly, and wiped dry with a woollen cloth, and then packed up in close baskets, observing to put some wheatfraw in the bottoms and round the fides of the baskets, to prevent their bruising against the baskets. And if some thick soft paper is said double or forme thick foft paper is laid double or treble all round the backet, between the ftraw and the pears, this will pre-vent the pears from imbibing the musty talte which is communicated to them by the straw, when they are contigu-ous; which taste often penetrates through the skin so strongly, that when the fruit is pared the taste will remain. You should also observe to put but one fort of fruit into a balket, left by their different fermentations they should not each other; but if you have enough of one fort to fill a basket which holds two or three bushels, it will be still better. After you have filled the bafkets, you must cover them over with wheat-straw very close, first laying a covering of paper two or three times double over the fruit, and sasten them down; then place these baskets in a close room, where they may be kept dry and from frost; but the less air is let into the room, the better the fruit will keep. It will be very necessary to fix a label to each balket, denoting the fort of fruit therein contained, which will fave the trouble of opening them, whenever you want to know the forts of fruit; besides, they ought not to be opened before their teafon to be earen, for the oftner they are opened and expected to the air, the worle they will keep. We doubt not but this and exposed to the air, the worse they will keep. We doubt not but this will be objected to by many, who imagine fruit cannot be laid too thin; for which reason they make shelves to dispose them singly upon, and are very sond of admitting fresh air, whenever the weather is mild, supposing it very necessary to preserve the fruit; but the contrary of this is sound true, by those persons who have large stocks of fruit laid up in their storehouses in London, which remain closely that up for sewhich remain closely that up for feeral months, in the manner before related; and when thefe are opened, the fruit is always found plumper and founder than any of those fruits which were preserved singly upon shelves, whose skins are always shrivelled and dry. For (as Mr. Boyle observes) the air is the cause of putresaction; and, in order to prove this, that honourable gentleman put fruits of several kinds into glasses where the air was exhausted, in which places they remained found for several months, but, upon bein exposed to the air, rotted in a very short time, which plainly shews the absurdity of the common method now used to preserve fruit.

Earth - Nat PEA. See Everlassing PEA.

Heart Pra, [Cardisformsm.] A plant of which there are two species growing naturally in both the Indies, where they climb up the shrubs that grow near them; they are tender annuals, and if cultivated in England, must be raised in a hot-bed.

PIGEON-PEA [Gytifus, Cayan.] A species of Cytifus growing in the American Islands, and cannot be preserved in England but in a flove.

In England but in a flove,

PEARL-ASHES, A falt made from

PEARL-ASHES, A last made the after of wood.

PEARL-BARLEY, [Herdeum Perlatum.] Barley prepared by grinding the fhelled barley into little round grains.

PEAT-ASHES, are a most excel-

PEAT-ASHES, are a most excellent manure for young clover and grass, vetches, and wheat fown dry in the spring of the year. They should be kept dry and entirely free from wet. The following are the observations of a judicious sarmer:

"Peat is found in most low grounds that lie betwixt hills, especially if timber has formerly stood on the spot. It lies at various depths, being often near the surface, and sometimes six, eight, or ten feet deep, having a stratum of black moory earth over it, such as is the soil of many of our low meais the foil of many of our low mea-dows near the banks of rivers; it fometimes even lles under a bed of

" Peat may be burnt, for the fake of procuring its after for manure all the fummer (calon: as foon as it is dug, fome of it is mixed in a heap re-gularly disposed with faggot wood, or other ready burning fuel: after a layer or two of it mixed in this manner, peat alone is piled up to compleat the heap. A heap will confift of from one hundred to a thousand loads. "After fetting fire to it at a proper place, before prepared for the purpose it is watched in the burning, and the great art is to keep in as much of the fmoke as possible, provided that as much vent is left as will nourish and

feed the fire.

"Whenever a crack appears, out of which the finoke escapes, the labourer in that place lays on more pear; and if the fire flackens too much within, which may easily be known by the heat on the outside, the workman must run a strong pole into the heap in as many places as is necessary to supply it with a quantity of fresh ais. When managed in this manner, the work goes on as it should do. It is to be noticed, that when once the fire is well kindled, the heaviest train does it.

goes on as it should do. It is to be noticed, that when once the fire is well kindled, the heaviest rain does it no harm whilst it is burning.

"Having pocured a sufficient quantity of ashes, the farmer's next care should be to apply them properly to use; and to do this, he must be made well acquainted with the nature of the manure he is to lay on his land.

"All ashes are of a hot, siery, caustic nature; they must therefore be used with caution. With respect to pearashes, almost the only danger proceeds from laying them on in too great quantities at improper seasons.

"Nothing can be better than peatashes for dressing low damp meadows, laying to the quantity of from sisteen

laying to the quantity of from fifteen to twenty Winchester bushless on an acre: it is best to fow them by hand, as they will then be more regularly

fpread.
"This work should be done in Janu-"This work should be done in January or February at latest, that the single smay be washed in towards the roots of the grafs by the first rains that fall in the spring.

"If they were spread more forward in the year, and a speedy rain should not succeed, being hot in their nature,

they would be apt to burn up the grafs, instead of doing it any service.

It is to be remembered, that the damper and stiffer the foil, the more pear-ashes should be laid on it; but in grafs lands the quantity should never exceed thirty Winchester bushels, and on light warm lands less than half that quantity is fully sufficient.

"On wheat crops these askes are of the greatest service, but they must be used with the utmost discretion. Were Y 2

they to be spread in any quantity before the winter, after the sowing the
corn, they would make the wheat too
rank, and do more harm then good;
were the spreading this manure, on the
contrary, deferred till the spring, the
corn could not possibly during the winter season be benefited by it. After
due reseason and repeated exercises. due reflection and repeated experience, my method of management in this case is as follows:

"About the beginning of Novem-ber, before the hard frosts set in, I sow

on every acre of my heavy clayey wheat land about eight. Winchefter bushels of these ashes; on my lighter warmer lands in wheat, I sow only sour bushels

at this feafon.

"The winter-dreffing is, I imagine, of great fervice: trifling as the quantity may feem, it warms the roots of the plants, brings is moderately forward, preferves its verdure, and dif-

ward, preserves at verdate, and disposes it to get into a growing flate the first sine weather after Christmas.

"About the latter end of February, or the beginning of March, on the above-mentioned heavy lands in wheat I bestow another dressing of ashes, by fowing of them on every acre eight bushels more ron my light lands, in this fecond drefting, I allow only fix bushels... "These ashes laid on in the spring

are of the greatest service, without any probability of danger : if rain falls within a few days after the dreffing is laid on, it is washed in, and has a happy effect on the succeeding crop.co-operation. rating with the manure that was laid rating with the manure that was laid on in November 2 if, on the contrary, dry weather for a long continuance fucceeds, the first winter-dreffing has its full effect, and the quantity laid on in the spring is in sact so small, that there is very little probability of its burning or hurting the crop.

"This method has succeeded very

"This method has succeeded very well with me, and I have no reason to think it can fail with any one elfo.
"This excellent manure is, I find, of great use in the turnep-husbandry on many accounts, particularly as it much contributes to preserve the young crop from being devoured by the fly.
"When I sow my turneps, before I harrow in the seed, I have eight bushels of these ashes strewed by hand on every acre, and when the plants shew their first leaves above ground, I sow on every acre four bushels more:

my neighbours fow their turnep-landthree or four times over.

"But one of the principal advantages derived from these ashes I have
not yet mentioned, which is, the very
great service they are of to every kind
of artificial pasture.

"Saintfoln receives great benefit
from this manure, and so does clover,
ray-grafs, and trefoil, provided it is
laid on with difference the proper seafor is about the month of February:
the quantity must be regulated by the
nature of the crop and soil; but; in
my opinion, it ought scarcely in any
instance to exceed Thirty Winchester
bushels. Clover, with the help of this
manure, grows with great luxuriance, manure, grows with great luxuriance, infomuch that I have often had two large crops of hay from the fame field in a year, and good autumn feed

in a year, and good autumn feed afterwards.

But the effect of it is most feen in tarca or vetches; and on them it is I bestow most of this mandre, as they will bear it, being a very fucculent plant. I had last summes a crop of tarc-hay that was altonishing, by the help of these asses, being above three large loads on an acro. The field contained fix acres; it was a dryish loam, and not very rich. In the beginning of February I caused ten bushels, Winchester measure, to be strewed on each acres: immediately after the first rains had washed them in, the same quantity was in like manner spread, and had washed them in, the same quantity was in like manner spread, and about the middle of March I bestowed on each acre fix bushels more for the last dressing. I am fond of dividing my entire quantities, thinking my crops are thereby less exposed to the danger of being burned, and the manure is besides more gradual and lasting in its

" My tares came on amazingly, but they run chiefly to haulm, which was what I wished, not having any defire of saving the seed, but intending to make the crop in hay; my only sear was, that it would rot on the ground before it was in a proper condition to cut; but this I luckily escaped, by the foil being tolerably dry, and by the finencis of the weather. It was so heavy in the fwarth, that I was obliged to pay an extraordinary price for mowing it.

"I have observed above, that I was fearful my tares would have rotted on the ground before they were fit to cut; this was owing entirely to the javigo-

this was owing entirely to the invigo-rating quality of the afhes, which by their falts, are promoted the growth of the plants even to luxuriance.

"Before I well knew the great fer-tilizing quality of their afhes, I loft, by improper management, a fine three acre piece of hog-peafe. I laid on the field, foon after the peafe came up, threefcore Winchefter buffiels of their afhes at one dreffing; this browshy threefcore Winchester bushels of these assess at one dressing: this brought them forward a great pase, but at harvest I found, to my grief, I had searcely any corn, for I had overdone it is laying on so much, and the pease were run

all to haulm.

"Ever fines this accident I have declined using them as a common dresting for my peafe; and this I have been do, as, in severa clined using them as a common dressing for my peafe; and this I have been the more induced to do, as, in several little experiments I have since made, I have found it extremely difficult to apportion the several quantities which ought to be laid on various soils when sown with pease; for the quantity that has one year succeeded very well with me, has the next, owing to the difference of the seasons, on the same soil, in another part of the same seld, totally disappointed me; so that, for pease, I esteem it a very critical manure, therefore very cautiously to be used. ufed.

manure, therefore very cautiously to be used.

"The effects of this manure will be visible at least three years, and it does not, like some others, leave the land in an impoverished stare, when its virtues are exhausted and spent.

"Peat-ashes are not so certain a manure for barley and oats as for the winter-corn: for at these are quick growers, and occupy the land but a sew months, this warm manure is often apt to push them forward too saft, and make them run too much to coarse straw, yielding only a lean immature grain. Oats, however, are not so apt to bit damaged by it as barley.

"To get a good crop of barley, I often sow it after turneps, which have two light dressings of ashes, in the manuer above described.

"When the turneps are sed off, or drawn, I give the field, if the session permits, a good ploughing: if they were sed off, the land will want no more ashes; but if they were drawn,

and either carried into another ground to feed theep, or given to my stall-fed oxen, I strew on each are, after this ploughing, are Windlester bushels of asses, leaving them to be washed in by the first rain. In this manner I leat the land lie till I give it the second sind last ploughing before it is fown. The manure has by this manugement the destred effect, and the barley generally produces full and honey cars.

"When I sow my barley after turneps, il give the land only two ploughings, because the foil was before much knowned by the hottogs bestowed on the curneps; but in other cases I am fond of allowing three, and sometimes four ploughings to my lands destined for ploughings to my lands destined for ploughings to my lands destined for barley; and I generally find it answer very well; for many years experience has convinced me, that upon a fine sith barley always thrives best, and yields most; in fact, the crop is almost always governed by the condition of the land, and a well-sifled foil is less exposed to danger in an untoward scason.

"Pear-sines approach, in their elects on the several crops on which they are laid, to took foot; but two-thirds of the quartity that is used of soot, will be sufficient of the union, as they are, in a much stronger degree, impregnated with a vegetative power; and they are, besides, in most places cafer procured in quantities, and at a cheaper rate.

impregnated with a vegetative power; and they are, bedden, in most places caffer procured in quantities, and at a cheaper rate.

"Is may possibly be objected, that this manure requires great nicety in the application: I allow it does; yet every intelligent farmer, who knows, the nature and the qualities of the foils of his feveral fields, will foon be able, with great precision, to judge how much he ought to lay on each acre: his chief care at first should be not to overdo it; for therein confitts the principal danger; though, after all, these ashes will, as the worst, unless said on in a very great excess indeed; only occasion the inexperienced farmer the perhaps partial folis of a single crop; for the succeeding year they will, in all probability, have a very falutary effect on the hind, and sometimes even repay the preceding lofs.

"When the error is in the e t is very eafy for a far falling into it; for, independent of every other confideration, the fole view of leffening his expences will, it is imagined, fufficiently induce him to be attentive to this particular.
"When peat is burnt for the fake

of its after in fummer time, it is ne-ceffary that fome care should be taken to defend them from the too powerful influence of the fun, air, dews, rain, influence of the fun, air, dews, rains, &c. or great part of their virtue would be exhaled and exhausted. If the quantity of affes procured is not very great, they may be eafily put under cover in a barn, cart-lodge, or hovel; but large quantities must necessarily, to avoid expense, be kept abroad; and when this is case, they should be ordered as is case, they should be ordered as

"A dry spot of ground must be chosen; and on this the ashes are so be laid in a large heap, as near as poffible in the form of a cone standing on its base, the top as sharp pointed as possible: when this is done, let the whole be covered thinly over with a

whole be covered thinly over with a coat of foil, to defend the heap from the weather: the circumjacent earth, provided it is not too light and crumbly, will always ferve for this purpole.

"When thus guarded, the heap may very fafely be left till January or February, when it is in general the feafon for fpreading it: but, before it is used, it is always best to fife the ashes, that the cinders, stones, and half burnt turf, may be separated from them.

"This may, perchance, by many be

"This may, perchance, by many be effected an unnecessary trouble; but experience, which is the best guide, has convinced me, that by this means I can better afcertain the quantity that ought to be fown on the feveral forts of land; for the small powdered ashes, being equal in quality, are of course equal in effect; whereas, when there has been any other mixture with them, the effect has often been greater or less than I could have wished. Thus, when I mention the number of bushels. I firew on an acre, it is always to be underflood of fitted alnes: should any farmer be inclined to try them rough as they are first produced after burning, the quantity to be allowed for an acre must be more in proportion to the mixture of other matter that is in them.

"These peat-asses are almost, as I have already observed, a general manure suited to every soil. On cold clay they warm the too compact particles,

dispose it to ferment, and of course fer-

dispose it to ferment, and of course fertilize, and, in fine, not only affist it in disclosing and dispensing its great vegetative powers, but also bring to its aid a considerable proportion of ready prepared aliment for plants.

"On light lands these ashes have a different effect: here the pores are too large to be affected, or farther separated by the salts or subphur contained in them; but, being closely attached to the surfaces of the large particles, of which this earth is generally composed, this manure disposes them, by means of its salts, to attract the moisture contained in the air; by this operation, the plants, which grow on these porous soils, are prevented from being scorched up and burnt; and if they want, which they generally do, more nourishment than the land is of itself capable of affording, this is readily capable of affording, this is readily and abundantly supplied by this useful

"In large farms it is very usual to to fee all the home-fields rich and wellmended by the yard-dung, &c. where-as the more distant lands are generally poor, impoverished, and out of heart, for want of proper manure being ap-plied in time. plled in time

plied in time.

"Whilft the farmers depend almost entirely on the yard-dung, this cannot fail being the case; for dung is of very heavy carriage; they are willing, therefore, to drop it as near home as possible, being in this way able to do a great deal more work in the same space of time; but would they once try the virtue of peat-ashes, all their lands might be alike improved, though at a very considerable distance from at a very confiderable distance from the home-stall; for so sew of them are required, and they are so light of car-riage, that a single tumbril will hold any as ought, in most cases, be laid on two acres of land; by which means, when these as a dressing for the distant fields, it costs the farmer less in carriage than does that of the stable-dung for his homefields."

PECK. A measure containing two gallons, or 8 quarts.

PELLITORY, of the Wall, [Parietaria.] This is a small plant, growing upon old walls; of an herbaceous, sub-faline rafte, without any smell. It is one of the five emollient herbs, and in this intention is occasionally made

nfe of. It is an ingredient in the ne-phritic decocion of the Edinburgh pharmacoposia. The expressed juice

pharmacoposia. The expressed juice has been given in the dose of three ounces as a diuretic.

Pellitosy of Spain, [Pyrethrum,]
This plant, though a native of the warm climates, bears the ordinary winters of this; and often flowers successively, from Christmas to May; the roots also grow larger with us than those which the shops are usually supplied with from abroad.

Pellitory root has no see fishe feedly.

Pellitory root has no fensible smell; its taste is very hot and accid, but less fo than that of arum or draconculus; the juice expressed from it has scarce, any acrimony, nor is the root itself so pungent when fresh as after it has been dried. Water, affilted by heat, extracts some share or its taste, rectified spirit the whole; neither of them elevate any thing in distillation. The principal use of pyrethrum in the present practice is as a matticatory, for promoting the fallwal flux, and evacuating vised humours from the head and reighbouring parts; by this means the juice expressed from it has fear and neighbouring parts; by this means it often relieves the tooth-ach, fome kinds of pains of the head, and lethergic complaints.

PELT. By this name is called the dead body of any fowl an hawk bath

dead body of any low; an hawk hath killed.

PELT-WOOL, Is the wool pulled off the skin or pelt of any dead sheep.

PENNY-EARTH. A term used by the farmers for a hard, loamy, or sandy earth, with a very large quantity of sea shells intermixed in it; some of which being round and flat, and in some measure resembling pieces of money, have occasioned the earth's being called by this name. It is an earth not easily dug, but is tsually undermined with pickaxes, and then falls in large sumps; which, with the frosts, break to pieces, and leave the shells loose. It is prepared by breaking and mixing well with water, and then makes very destrable shorts. The Jersey combers comb-pots are also made of it, and the sides and roofs of ovens are plaistered with it; and, being rightly managed, it combines into a shower almost as strong as plaister of Paris.

PENCHIN Server. Wild analysis.

PENGUIN, [Roratas.] Wild anamas. This plant is very common in the West-Indies, where the juice of its

fruit le often put into punch, being of a tharp acid flavour. There is also a wine made of the juice of this fruit. wine made of the juice of this fruit which is very strong, but it will no keep good long, so is only for present use. This wine is very intoxicating, and heats the blood, therefore should be drank very spacingly.

In England this plant is preserved as a curiofity, so the fruit feldom and the strong str

rives to any degree of perfection for ule in this country, though it often pro-duces fruit in England, which has ri-pened pretty well; but if it were to ripen as thoroughly here as in its native country, it will be little valued on account of its great authority, which will often take the fkin off from the mouths and throats of those people

will often take the ikin off from the mouths and throats of those people who eat it incautiously.

This plant is propagated by seeds, for though there are often suckers fent forth from the old plants, yet they come out from between the leaves, and are so long, slender, and ill-shapen, that if they are plants. These seeds make regular plants. These seeds should be sown early in the spring in small pots, and plunged into a hot-bed of tanners bark, where the plants will come up in fix weeks. When the plants are strong enough to transplant, they should be carefully taken up, each planted into a separate pot, and plunged into the hot-bed again; when the plants have taken new root, they should have air and water in proportion to the warmth of the season. In this bed the plants may remain till Michaelmas, then they should be removed into the stoye and plunged into moved into the flove and plunged into the bark-bed, where they should be treated in the same manner as the

Ananas.

The leaves of this plant are strongly armed with crooked spines, which render it very troublesome to shift or handle them; for the spines catch hold of whatever approaches them by their crooked form, being some bent one way, and others the reverse, so that they catch both ways, and tear the skin or clothes of the persons who handle them, where there is not the greatest care taken to avoid them.

PENNY-ROYAL, [Palegiam.]

This plant grows spontaneously in se-

This plant grows spontaneously in several parts of England upon moi commons, and in watery places; train ing upon the ground, and striking soots at the joints. Our markets have

been for some time supplied with a garden sort, which is larger than the other, and grows upright: this is called by Mr. Dale pulegium exclum.

Pennyroyal's a warm, pungent herb, of the aromatic kind, similar to mint, but more acrid and less agreeable; it has long been held in great esteem, and not undeservedly, at an aperient, and deobstruent, particularly in hysteric complaints, and suppressions of the uterine purgations. For these purposes the distilled water is generally made use of, or what is of equal efficacy, an insusion of the leaves. It is observeable, that both water and rectified spirit extract the virtues of this herb by insusion, and likewise elevate greatest part of them in distillation.

In the shops are kept a simple and

In the frops are kept a fimple and fpirituous water and effential oil of the plant; this herb is used also in the compound valerian water and troches of myrrb, and its fimple water for making the lac ammoniac and the

Harts PINNTROYAL, [Pulegian creffiam.] This species is met with, though not very often, in our gardens It is formewhat fronger, yet rather more agreeable, than the foregoing, both in tafte and friell,

Marfi PENNYROYAL. Water Na.

vel-wort.

PEONY, [Paroma.] The species are a The male, 2, The semale, 3, The foreign Peony, 4. The Portugal Peony, 5. Tartarian Peony. They are all annual in stalk, and perennial in root, their propagation is easy by dividing the roots in August or September.

PEPPER, [Piper.] The pepper plant is a shrub whose root is small, sibrous, and flexible; it rises into a stem, which requires a tree or a prop

flere, which requires a tree or a prop-to support it. Its wood has the same fort of knots as the vine; and when it is dry, it exactly resembles the vine-branch. The leaves, which have a branch. The leaves, which have a firrong fmell and pungent taffe, are of an oval shape; but they diminish towards the extremity, and terminate in a point. From the flower-buds, which are white, and are sometimes placed in the middle, and sometimes at the extremity of the branches, are produced small berries resembling those of the currant-tree. Each of thefe contains between twenty & thirty

in Consta

corns of pepper; they are commonly gathered in October, and exposed to the sun seven or eight days. The fruit, which was green at first, and afterwards red, when stripped of its covering, assumes the appearance it has when we see it. The largest, heaviest, and least shrivelled, is the best.

The pepper-plant flourishes in the islands of Java, Sumatra, and Ceylon, and more particularly on the Malabar coast. It is not sown, but planted; and great nicety is required in the choice of the shoots. It produces no fruit till the end of three years; but bears so plentifully the three sucbut bears fo plentifully the three fuc ceeding years, that some plants yield between fix and seven pounds of pep-per. The bark then begins to shrink, and the shrub declines so fast, that in twelve years time it ceases bearing.

twelve years time it ceases bearing.

The culture of pepper is not difficult; it is sufficient to plant it in a rich soil, and carefully to pull up the weeds that grow in great abundance round its roots, especially the three first years. As the sun is highly necessary to the growth of the pepper plant, when it is ready to bear, the trees that support it must be sopped, to prevent their shade from injuring the fruit. When the season is over, it is proper to ctop the head of the plant. Without this precaution, there would be too much wood, and little fruit.

Long Peppers, [Piper Loverum.] This

Long PERFER, [Piper Longum.] This is the fruit of a plant growing also in the East Indies. It is of a cylindrical figure, about an inch and a half in length; the external furface appears composed of numerous minute grains disposed round the fruit in a kind of spiral direction.

spiral direction.

Jamaica Perfer. This is the produce of our own plantations; it is the fruit of a large tree, growing spontaneously in the mountainous parts of Jamaica, called by Sir Hans Sloan, myrius arborea, arametics; folias laurinis. The smell of this spice resembles a mixture of cinnamon, cloves and nutmegs: its taste approaches to that of cloves, or a mixture of the three foregoing; whence it has received the name of all-spice. The shops have been for some time accustomed to employ this aromatic as a succedaneum to the more costly spices, and from them it has been introduced into our hospitals; been introduced into our hospitals; the London college have given it a

and to ball of oak reptied of his

place in their late dispensatory, and direct a simple water to be distilled from it, which possesses the flavour of the pimento in great persection. It yields a large quantity of pleasant effential oil, which tinks in water; this oil is recommended in the Edinburgh pharmacopogia. Rectified spirit extracts its pungency and flavour, and elevates nothing in distillation.

Guinea Perren, Capficom.

Wall Perren, [Sedum acre.] This
plant grows very common upon old
walls, in all parts of England.

Waler PRPER. See Biting Arfmart. Proper won T. Q See Dittender.

PEPPERWORT (See Distancer.
PEPPERMINT; [Mentha piperis.]
This species has been lately introduced into practice, and received for the first time in our present pharmacopæia: very sew of the botanical or medical expressions, make medical of the later of writers make mention of it; it grows wild in some parts of England, in moint watery places, but is much less common than the other forts. The leaves have a more penetrating smell than any of the other mints, and a much warmer, pungent, glowing taste like pepper, finking as it were into the tongue. The principal use of this herb is in flatulent cholics, languors, and other like diforders; it seems to aff as soon as taken and extends it of act as foon as taken, and extends it effects through the whole fystem, in-stantly communicating a glowing warmth. Water extracts the whole of the pungency of this herb by infu-fion, and elevates it in distillation.

PERENNIAL, [Perennis.] Perennial, or everlasting plants; plants that are perpetuated by the roots, that is, whether their leaves and stalks decay annually in winter, or always remain,

provided the roots of feveral years duration, they are ftill perennial plants.

All plants, therefore, with abiding roots, both of the herbaceous tribe in general, and offthe fhrub and tree kinds, are perennials; though in the general acceptation of the word perennial, it is most commonly applied to herbace-ous vegetables with durable roots, more especially those of the flowery kind, which among the gardeners are com-monly called fimple perennials, parti-cularly the fibrous-rooted tribe; but it is equally applicable to fibrous, tube-rous, and bulbous-rooted plants, whose roots are of several years duration : likewise all shrubs and trees of every denomination, as having ab ding

roots, are also perennial plants,
Perennial plants consist both of de-ciduous and ever-green kinds; those that cast their leaves &c. in winter are termed deciduous perennials, and those which retain their leaves ever-

Of the herbaceous perennials, however, both of the fibrous-rooted tribe, tuberous and bulbous-rooted kinds, far the greater part have annual stalks, rising in spring and decay in winter; and a great many lose their leaves en-tirely also in that season, such as the perennial fun flower, afters, and numerous other forts; and many forts retain their leaves all the year, but not their flalks, exemplified in the auricula, polyanthus, fome campanulas, pinks, carnations, and many others.

Great number of the herbaceous perennials multiply exceedingly by offers of the root, by which they are

fets of the root, by which they are propagated in great abundance.

All the tree and fhrub perennials are durable both in root, item, and branch; but all renew their leaves annually, even the ever-green kinds, although they are in leaf the year round, yet they put forth new leaves every year, to which the old ones gradually give place.

PERIWINKLE, [Vinca.] There are three pecies, the narrow, the broad-leaved, and the oval; they are easily propagated by their trailing flaks, which put out roots freely.

PERRY. A vinous liquor made of pears, as cyder is made of apples. See Cydes. The best pears for perry, or at least the forts which have been hitherto deemed the fittelt for making this liquir, are so excessively tart and harsh, that no mortal can think of eat-ing them as fruit; for even hungry fwine will not eat them, nay, hardly fo much as smell to them. Of these the Bosbury pear, the Bareland pear, and the horse pear, are the most esteemed for perry in Worcestershire, and the squash pear, as it is called, in Glocestershire; in both which counties, as well as in some of the adjacent parts, they are planted in the hedge-rows and most common fields.

There is this advantage attending pear trees, that they will thrive on land where apples will not fo much as live,

and that fome of them grow to fuch a free, that a fingle pear tree, particularly of the Boibury and the fquash kind, has frequently been known to yield, in one feason, from one to four hogheads of perry. The Boibury pear is thought to yield the most lasting and most vidous siquor. The John pear, the Harpy pear, the Drake pear, the Mary pear, the Lullum pear, and several others of the harshest kinds, are effected the best for perry, but the red der or more tawney they are, the more they are preferred. Pears, as well as apples, should be sull before they are ground. ground.

PERDVIAN BARK, See BARK, ST. PETER & WORK, [Ajcy um.] This plant has a perennial root with an annual Italk; it is of little use or

PETTYWHIN. Forze, PHEASANT's EVE, [Adonis.] See

ADON'S.

PHYSIC for a Horfe. There are a great variety of occasions on which this creature may want purging, and many forts of physic may answer the purpose; but before we come to the method of preparing any of these, it will be necessary to give the farmer proper directions concerning the use of such medicines. A horse must be prepared for a purge the day before it is given him, or it will take very little effect; and then it will operate more or less, according to the management of him during the time.

The day before a horse is to be purged, give him a good quantity of water with scalded bran in it, and let him have it warm. Keep him quiet,

him have it warm. Keep him quiet, and the hext morning, before he has any thing to eat, give him the purge. Any one of the following will answer the common purposes, with little charge.

1. A Purge with Aloes.

Take an ounce and a quarter of horfe-aloes beaten to powder, and a quarter of an ounce of cream of tartar, and half an ounce of powder of annifeeds, work this up into a confiftence, and roll it round into two balls. Rub these over with butter, and give them to the horfe; they will, by means of heing greafed. (In down very of heing greafed. (In down very other the horfe; they will, by means of heing greafed. (In down very other the horfe; they will be the horfe; they will by means of heing greafed. (In down very other the horfe; they will be they will be they will be the horfe; they will be they will b of being greafed, flip down very freely; and after them give him a horn of small beer made warm.

The dofe is to be made larger or fmaller, as the borfe is larger and coarfer fed, or finer limb'd, and managed more delicately. There is as much difference between the conflitu-tion of a cart-horfe and a racer, as betion of a cart-horfe and a racer, as between a drayman and a person of quality; and they must in all respects be treated accordingly, not only in the streated accordingly not not only in the streated accordingly not only in the

or more; greate them on the outfide, and glue them to the horfe
with fome warm ale afterwards.
These are two common receipts, but
they are often ill proportioned in the

quantities; fomething of this kind ftands under the name of a purge for horses in most books that treat of these things; but the quantity of the anniseeds is too great, in the common directions for the first; and this will make a horse fick afterwards; and to the other there are commonly added the other there are common to the other than the ulelels ingredients. proved proportions, and they will an-fewer almost every oceasion there can be for a horse's being physicked in this

Let the balls and the beer be given him early in the morning, and let him him early in the morning. then be rid out gently for a quarter of an hour. Then bring him cool in, and let him be let up two hours without food

After this time give him a small

quantity of good hay, and a quarter of an hour after that some warm water. An hour after this give him some scalded bran. He will purge kindly after this manner of management; and after this he should be rid out a little again; then when he is brought in, he should have some bran and wa-ter warm, with out a small quantity of the water. Then let him be rid out again; in this manner a horse is to be treated with his purge, and, in general, it will be easy to make him work more or less at pleasure, by giving him more or less exercise, and more or less of the bran and water.

If the purge has been too violent, and will not ftop, the following aftringent drink will always ftop it.

An Aftringent Drink.

Boil three pints of ftale beer, and fome pieces of crust of brown bread: to this put an ounce of whiting, and a quarter of an ounce of diasordium, made withnot honey; if this does not stop it in four or five hours, give the same quantity of whiting and double the quantity of whiting and double the quantity of diasordium in only one pint of the beer and bread. This will make him altogether quiet and easy, and he will be in his body as usual.

For a Cold.

For a Cold.

This is a differder lowell understood, that it cannot be missaken, nor does

it need any explanation.

Hoil in a quart of ale three ounces of fresh liquorice-root, beat very fine into threads. Strain the liquor off, preffing it hard, and add to it three drams of elecampane powder, one dram of powder of anoticeds, a quarter of a pint of oil, and a quarter of a pound of honey; mix all well, and give it warm. If it does not take effect the first time, let it be repeated three or four times, and it seldom fails.

dom fails.

Balls for a Court of long flanding.

Put into a large how! fix pounds of wheat meal, mix with it two ounces of powder of annifeeds, cummin-feed one ounce, linfeed three ounces, ferugateek-feed one ounce and a half; fir these well about, then mix half a pound of liquorice powder, and a quarter of a pound of flour of brimstone; add these to the rest. Lastly, add bay-berries and Juniper-berries, powdered, three ounces of each, powdered, three ounces of each, and the fame quantity of powder of elecampane. When all are well flirred and mixed

together, break fix egga, throw away the whites, beat up the yolks with two quarts of mountain wine. Add to this a pound and a half of honey and a pint of falled oil. Mix all these perfectly well together; then being in the powder, and work the whole to a patte. It this should be too stiff, a little more wine must be added. a little more wine must be added;

and, if too folt, some floor mind be put in, till the whole be of fligh a confidence that it will con-veniently roll into balls.

These are to be made of the higgers of a hen's egg, but round. This rolling them up is only for the convenience of keeping; when they are to be use they are to be dissolved. Two is t Two is the proper quantity for a dole, and they are to be melted in the creature's water, morning and evening, for fifteen

PHYSIC NUT. See Payle Nut.
PIGEON. It is a great recomment. dation of any creature to the farmer, that it will be kept at imall expence, and this is the case with the nigeon, which he should keep; for there are fome kinds that require a great deal of food and charge: the proper pigeon for the dovecoat, which is the only kind he is to regard, is able the greatest part of the year to provide for itself; and when it requires his affishance, the food

when it requires his affiliance, the food is not of any dear kind.

There are at this time many kinds of pigeons kept in England, by people fond of curiofity, and it has become a fludy to procure and raife new kinds among those who are called pigeon-sapciers, as much as to get from abroad, or raife from feed, new kinds of carnations or auriculas among the floriffs. But with this the industrious hurbandman has nothing to do. He husbandman has nothing to do. He is to keep pigeons for their value, not their beauty; and he is to confider which may be kept with most ease, which is in his way one of the greatest of recommendations to any thing.

Not to enter into the nice diffinali-

Not to enter into the nice diffinitions of the kinds which are of late years become endless and innumerable, we may fay in general that there are two forts; the tame, and dovecoat pigeon. The tame pigeon is valued not only for beauty, but for the largeness of its body; the common pigeon, which is the kind usually kept in dovecoats, and thence called the dovecoat pigeon, is smaller, and less beautiful.

The tame kind generally have but two young ones at a brood; but they make some amends for the smallness of the number by the frequency, of their hatching; for, if well fed and tanded, they will bake young ones every month.

For the choice of these the hearty is generally most regarded; but there

mould be care taken to pair them well, and this is the more worth while be-

afterwards.

They must be kept clean, for they hate dirt, though they make a great deal of it. But their food is fo dear, that few but those who know very well how to manage them care to meddle with them. Their best food is tares or white peafe, and they should have befide this some gravel scattered about, and clean water at all times : and a great deal of care must be taken to preferve them from vermin, and their eggs from the starlings and other birds, which always haunt the places where they are kept, in order to fuck them.

In order to the perfect thriving of these pigeons, it will be proper, beside their food, gravel, and water, always to let there be some salt, clay, or some other thing with fea falt in it, for them

to peck at their pleasure.

We have faid thus much with respect to the management of the tame pigeon, for the information of fuch as may chuse to breed them, and have not had opportunities of feeing it done; and it will be proper to add here, that although the expence and trouble they occasion, be more than is worth the husbandman's while in general to give himself; yet there is this advantage, the common pigeon as a manure.

After this thort account of the tame,

we come to the confideration and ma nagement of the common or dovecoat pigeon, which is a subject that de-mands, and deserves the husbandman's

utmost regard.

The keeping of pigeons is a great advantage to every farmer that may do it; and they bring in a great profit for a very fmall expence in all places; but they thrive best in open countries, because there is usually most corn there, and they feed with less danger, the hedges in enclosed places sheltering people while they shoot them.

There are fome counties where the husbandmen fow great quantities of horse beans and grey pease, and in these particularly the pigeons seed to a great advantage. These sorts of pulse are sowed earlier than other kinds of grain; and their early feeding upon them makes them healthful and flout at those times, and is an occasion of

their breeding earlier than they do elfewhere, which is a confideration of great importance.

The common blue pigeon is properly the dovecoat breed; and it has the ad-vantage of many other kinds, in that it is hardier, and will live in the worst

winters.

If it be too small for the farmer's purpose, he may mend the breed by putting in a few tame pigeons of the most common kind, and the least con-spicuous in their colours, that the rest may the better take to them by finding them more like themselves; this, however, is to be done with caution, and never without a due confideration; for though the bigness of a pigeon's body is a plain advantage, yet it is very well known in the kinds in general, that the smallest bodyed are the best breeders.

The ringdove has been by some in-

troduced into the dovecoat, by fetting the eggs under a common pigeon; they will in this case live, and take the chance among the pigeons; and they have two advantages over them, the one in their largeness, and the other in their hardyness; for they will endure any weather, and live upon any food. The husbandman should have a very

careful eye upon the proportion of the fexes among his pigeons; for there is nothing so hurtful as the having too many cocks, especially if they keep the larger or tame kind. It is his business to keep his dovecoar well ftock'd; and most people who keep them make their consciences easy about deluding away those belonging to their neighbours; but this abundance of cocks thins the dovecoat, for they grow quarrelfome, and will beat others away; till by degrees a very thriving dovecoat shall be by this fingle mistake reduced to a poor condition,

A very cheap and eafy way of making a dovecoat is to build the walls with clay mixed with firaw, they may be made four feet or more in thickness, and while they are wer it is eafy to cut holes in them with a chiffel or

other instrument. This kind of dovecoat, beside its cheapness, has the advantage of great warmth, and no building agrees bet-ter with the pigeons. A dovecoat of this kind, of four yards square in the clear, may be built for about five pounds.

The holes should be made about fourteen

fourteen inches deep, and a little dip-ping backward. The Rev. Mr. Lawrence who used this method of building his dovecoat fays, that the pigeons prospered in it better than in any brick or stone building he had seen.

Of whatever materials the coat be erected, it should be white-washed fre-quently on the outside. The pigeon, as has been said already, is a cleanly bird: it loves the appearance of neatness; and beside the white colour, renders the building more conspicuous,

As to the food of pigeons, befide the peafe, and tares already mentioned, barley is very proper, heartening them very much, and making them lay; and for the same purpose buck-wheat is also an excellent as well as

cheap food.

For the greatest part of the year, however, the common pigeons in a dovecoat take care of themselves, and need no food from their keeper. There are only two feafons at which it is neceffary or proper to feed them. One of these times is the depth of winter, when the ground is covered with snow, or hardened to by frost, that nothing is to be got; and the other is, the mid-

dle or latter end of June.

The reason of seeding them in the first of these seasons is obvious; the first of these seasons when they speak of latter, the farmers, when they speak of these soul call benting time. There is this fowl, call benting time. There is a grafs called bent grafs, the feed of which is ripe about this feafon, and is the only food of that kind the pigeons can easily get, the pease being not yet ripe. This is a very poor food, and the pigeons at this season usually have many young broods; so that they will be starved if they are left to this poor be starved if they are left to this poordiet: and the farmer will always find his account in giving them food at this feafon, as well as at the other. This lasts however but a small time; and the other is only necessary at the severest days of winter; so that she pigeon is at the utmost but a small expence, and that for a very short time.

Beside the sood, the breeder of tame streams has been advised to give them

pigeons has been advised to give them a lump of falted clay, and the same induigence must be shewn to these. But as they are more numerous. A large team of clay should be laid ear, the heap of clay should be laid near the dovecoat, and the brine of the family continually beaten in among it. Ano-

ther way is to make a kind of mort with lime, fand, clay, and falt, which they will peck with great fatisfaction. The pigeons themselves have pointe out this method, for they are conti nually pecking at the joints of walls to get out the mortar. When it is thus made on purpose for them, it is best to make it thin, and keep it fo by often beating it up with brine.

In some places they lay what is called a falt cat, near the devector. This is a large lump of falt made for the purpose at the falt pans; and is the method commonly taken where there are works in the neighbourhood, but the way of using falt in a mixture with

Clay is better. What is found by experience to an fwer best of all is this. A heap of loam is to be laid near the dovecoat, and beat up to a kind of pap with brine or water; into this is to be thrown a las quantity of bay falt, and a little faltpetre, and with it a shovel full or two of large coarse sand. When brine as used to beat up the loam, less sait is to be used; and when water, there must be the more of it in proportion.
And in the same manner, if the loam contain a great deal of fand, the lefs is to be added to it; and if it contain lefs, the more is to be given. Where loan is not to be had, clay will do, but then a much larger quantity of fand must be put in; and the best sand for this put-pose is large coarse sea sand, which is already impregnated with falt water: or that which is got in fcreening of gravel, nol

It is a very fingular thing, that the pigeon foves Cale in this manners its fondness for faltpetre, which is very great, is not fo well known; thoug ferving the liking this bird has to the mortar in old walls, which contains a falt very nearly aliyed to the common

faltpetre.

Salt is not only ufeful in this ma ner to please the pigeons, when they are in health, but nothing recovers them fo readily from tickness. A mixture of bay falt and cummin feed being with them an universal remedy.

A great many contrivances have been published; and many more are handed about among the country prople as great fecrets, for the making the pigeons love their habitation, and tempting tempting such stragglers from their neighbours as chance to come to the coat to fettle in it. Some have advised the use of affafætida, and others of cummin feed before mentioned for this purpose; but the best method of all others is to keep up constantly such a heap of falted loam as before described; this they love, and they will therefore flay where they can have it in plenty. This contrivance, with the addition of keeping the dovecoat neat and clean, and not fuffering them to be disturbed in it, will be fure to keep the flock in good number, and too likely to increase it at the expence of the neighbours.

The profit of pigeons is very confi-

derable, and very certain; for they breed very fast, and there is a constant demand for them. Near great towns it may be worth while to keep fome of the large tame kind; because although shey cannot be fed but at a large expence, yet their young come fo early, and are fo fat and fine, that they command a price, which very well returns it; but in the country, the common pigeon is the proper kind; for though mearly fo great, their number, and fmall expense of keeping, very well make

PILEWORT, (Chelidonium minus.)
This is a very finall plant, found in moist meadows and by hedge fides: she roots confift of flender fibres, with some little tubercles among them, which are supposed to resemble the emorrhoids; from whence it has been oncluded, that this root must needs of wonderful efficacy for the cure of that diftemper : to the tafte, it is little

other than mucilaginous.

PIMENTO. Jamaica pepper.
PIMPERNEL, (Aimagallis.) Common male and female pimpernel. This is a low plant, in appearance refem-bling chickweed; but easily distin-guishable by its leaves being spotted underneath, and joined immediately to the falk. The male and female pimpernels differ no otherwise than in the colour of their flowers: they are both found wild in the fields, but the male or red flowered fort is most common.

Both the Pimpernels have an herbaceous, roughish tafte, with little or no fmell, Many extraordinary virtues bave been attributed to them, Geof-

froy esteems them cephalic, sudorific, vulnerary, antimaniacal, antepileptic and alexaterial. Trague, Calpar, Hoffman, Michaeli, and others, are allovery liberal in their prairies: one of these gentlemen declares, that he has known numerous inflances of the fingular efficacy of a decoction and tinc-ture of pimpernel, in maniacal and me-lancholic delirla. But later practitioners have not been fo happy as to meet with the like success, Pimpernel is not unfrequently taken as food; it makes no unpleasant sallad; and in some parts of this kingdom, is a common potherb. A fpirituous tincture of it contains no thing valuable: the only preparation that promifes any utility, is an extract made with water; or the expressed juice depurated and inspissaled.

Water PIMPERNEL, Samolus. This plant grows wild in (warnpy places, where the water ufually stands in winter, and is feldom preferved in gardens. It is an annual plant, which flowers in June, and the feeds are ripe in August; at which time, whoever hath a mind to cultivate this plant, should sow the feeds on a moult loil, where the plants will come up, and require no farther care but to keep them clear from

PINE, [Pinus.] The species are, 18, the wild or Scotch pine, or Scotch fit.
This is called by us the Scotch fir, because it grows naturally on the Highlands of Scotland, where the feeds,

falling from their cones, come up and propagate themselves without any care. But it is not in Scotland only that these trees thrive naturally; for they grow fpontaneously in Denmark, Norway, spontaneously in Denmark, Norway, and Sweden. And though, from the above instances, it would seem that they delighted principally in these northern parts; yet when the plants are properly raised and planted out, no climate comes amis to them, for they will thrive and grow to be good timber trees in almost any part of the world.—The timber of this tree is what we call deal; is sometimes red, sometimes yellow, but chiefly white.

2. The Womenth Pins. This grows naturally in most parts of North America, where it is called the white pins. It is one of the tallest trees of all the

It is one of the tallest trees of all the fpecies, often growing a hundred feet high in those countries. The bark of high in those countries. this tree is very fmooth and delicate,

especially when young; the leaves are long and sender, five growing out of each sheath; the branches are pretty closely garnitited with them, so make a five appearance; the cones are long, shender, and very loose, opening with the first warmth of the spring, so that if they are not gathered in winter, the scales open and let out the seeds. The wood of this fort is entermed for making masts for ships; it is in England titled Lord Weymouth's, or New-England Pine. As the wood of this tree was generally thought of great service to the navy, there was a law made in the ninth of Queen Anne for the preservation of the trees, and to especially when young; the leaves are made in the ninth of Queen Anne for the prefervation of the trees, and to encourage their growth in America; and it is within these forty years that these trees began to be propagated in England in any plenty, though there were some large trees of this fort growing in two or three places long before, particularly at Lord Weymouth's, and Sir Wyndham Knatchbull's in Kent; and it has been chiefly from the leade of and it has been chiefly from the feeds of the latter that the much greater number of these trees now in England have been raised; for although there has annually been some of the seeds brought from America, yet thefe have been few in America, yet these have been lew in comparison to the produce of the trees in Kent; and many of the trees which have been raised from the seeds of those now produce plenty of good feeds, particularly the trees in the gardens of his Grace the Duke of Argyle at Whitton, which annually produce large quantities of cones.—This fort and the Scotch Pine are the best worth cultivating of all the kinds for the ske of their wood: all the kinds for the fake of their wo the others may be planted for variety in parks, &c. where they make a good appearance in winter, when other trees appearance in appearance in appearance in the service in the servi

2. The Cultivated Pine-tree, commonly called the Stone Pine. The Stone Pine is a tree of which there though be a few in all plantations of ever-greens. It will grow to a confiderable height, and arifes with a ftrait and fair ftem, though with a rough back. The leaves will contribute to the divertifying the icene, as they differ in colour from the other forts, and are arranged in a different manner. The cones which it bears are monttroully large and turbinated; they strike the eye by their bold appearance when hanging on the trees, and afford pleasure upon being more closely examined, from the beautiful arrangement of their fcales. They produce a large Rernel as fweet to the tafte as an almond, which formerly were kept in the thops and fold for reftoratives, but are at present neglected. In Italy, the Rer-nels are served up in deserts at the rable, and are thought to be falutary in colds, coughs, and confumptions. Its fimber is not quite to valuable as the other forts. The colour is not the fame

timber is not quite so valuable as the other forts. The colour is not the same in all trees; some exhibiting their timber of a very white colour, others are yellower, and smell stronger of turpentine.

4. The Swamp Pine-tree. This is a very large growing tree, and is highly proper, as its name imports, to be planted in moist places.—The leaves are long, of a delightful green colour; three issue out of each sheath, and adora the younger branches in great plenty.—Its propagation is the same as the Weymouth Pine; and the planting out, and after management of the trees, should be exactly similar.—It will grow well on all upland and dry grounds; but it chiefly delights in moist places.

5. The Cembra Pine. The Cembra Pine is a fine tree; the leaves are very beautiful, being of a lighter green than most of the sorts, and are produced five in a sheath. The leaves are long and narrow; and as they closely ornament the branches all round, they look beautiful, and render the tree on that account very valuable. The cones of this tree allo have a good effect; for they are larger than those of the Pineaster, and the squame are beautifully arranged. This tree is a native of the Aspa, and fquame are beautifully arranged. This tree is a native of the Alps, and is well described by Mr. Harte, in his elegant estays on husbandry, under the title of Aphernous Pine. He considers it as a tree likely to thrive with great advantage on our bleak, barren, rocky, and moutainous lands; even near th fea, and in north or north eafterly af-pects, where fomething of this hardy kind is much wanted. The timber is large, and has many uses, especially within doors, or under cover. The bark of the trunk or bole of the tree and not reddiff like the bark of the Pine but of a whitish cast, like that of the Fir. The shell which incloses the kernel is eafily cracked, and the kern covered with a brown fkin which per They are about the fize of a or mon pea, triangular like buck-wheat and white and folt as a blanched al-

mond, of an oily agreeable tafte, but mond, of an oily agreeable taste, but leaving in the mouth that small degree of asperity which is peculiar to wild fruits, and not unpleasing. These kersels sometimes make a part in a Swifs defert. Wainfcotting, stooring, and other joiners work, made with the planks of Aphernouss, are of a siner grain, and more beautifully variegated than deal, and the smell of the wood than deal, and the fmell of the wood is more agreeable. From this tree is extracted a white odoriferous refin. On this occasion the curious planter may consult a very scarce piece, De Arboribus Coniferis, written about 200 years ago, by Pietro Belloni,—In the plantations belonging to Jeremiah Dixon efq, at Gleddow near Leeds, may be feen feveral of these Pines. They are there called the Gleddow Pine.

6. The Silver Fir-tree. This is a noble upright tree. The leaves grow fingly on the branches, and their ends are flightly indented. Their upper furface is of a fine ftrong green colour, and their under has an ornament of two white lines, running lengthways on each fide the midrib, on account of which filvery took this fort is called the Silver Fir. The cones are large, and grow erect; and when the warm weather comes on, they foon fhed their feeds; which should be a caution to gather the cones before -This tree is common that happens. in the mountainous parts of Scotland, and in Norway, and affords the yellow deals. From its yielding pitch, it has obtained the title of Picea, or Pitch-tree.

7. The common Spruce Fir-tree. Spruce Fir is a beautiful tree, as well as a valuable one for its timber, producing the white deal. It is a native of Norway and Denmark, where it grows spontaneously, and is one of the principal productions of their woods. It also grows plentifully in the High-lands of Scotland, where it adorns those cloud-capped mountains with a constant verdure. The longconed Cornish Fir is a variety of this tree, and differs scarcely in any respect, except that the leaves and the cones are larger. As gardeners generally receive it as a distinct Fir, it may not be amiss to mention it here; though we own the difference is so inconsiderable as to make it hardly worth feeking after; and though the cones are rather longer than the other fort, yet of that also the cones are very large, oftentimes

near a foot; fo that they may eafily pass the one for the other, as they both hang down alike,

hang down alike.

8. The Canada Pine. Hunter's Evelyw,
For the cultivation of Pine, fee Fix,
PINEASTER, (Pinus Sylvefiris.) A
species of Pine growing wild on the
mountains of Italy.
PINE-APPLE, [Ananus.] Of this
plant there are several varieties differing

in the shapes, size, and colour of their fruits. The most esteemed are, r. Oval shaped with white siesh, or the green pine. 2. Pyramidal, or sugar-loaf pine-apple, with yellow siesh. 3. Green Sugar-loaf, 4. Black Antigua or Ripley pine-apple. 5 Shining Green-leaved pine, with scarce any spines; or the King pine. 6 Granada Pine with marbled leaves. 7. Bogwarp pine, with broad green leaves, 8. Smooth long narrow leaved pine, 9. Gold-striped leaved pine, 10. Silver-tiriped leaved pine.

Of the above forts the two former was highly affected and the later of the leaved pine.

are chiefly effeemed, and the latter pre-

ferred most of all.

The plants are propagated by plant-ing the crowns which grow on the fruit, or the fuckers which are produced either from the fides of the plants, or under the fruit, both which have been found equally good; although by fome persons the crown is thought preserable to the suckers, as supposing it will produce fruit sooner than the suckers,

which is certainly a mistake.

The suckers and crowns must be laid to dry in a warm place for four or five days, or more (according to the moisture of the part which adhered to the old plant or fruit); for if they are immediately planted, they will rot. The certain rule of judging when they are fit to plant, is by observing if the bottom is healed over and become hard; for if the suckers are drawn off carefully from the old plants, they will have a hard skin over the lower part, fo need not lie fo long as the crowns, those whose bottoms are moist; whenever a crown is taken from the fruit, or the fuckers from old plants they should be immediately divested of their bottom leaves, so high as to allow depth for their planting; fo that they may be thoroughly dry and healed in every part, lest when they receive heat and moisture they should perish, which often happens when this method is not observed. If these suckers or crowns

are taken off late in the autumn, or during the winter, or early in the fpring, they should be laid in a dry place in the flove, for a fortnight or three weeks before they are planted, but in the fummer feafon they will be fit for planting in a week at fartheft.

As to the earth in which these should be planted, if you have a rich good kitchen-garden mould, not too heavy, fo as to detain the moiffure too long, nor over light and fandy, it will be very proper for them without any mixture: but where this is wanting, you should procure some fresh earth from a good pasture, which should be mixed with about a third part of rotten neats dung, or the dung of an old melon or cucum-ber bed. These should be mixed fix or eight months at least before they are used, but if it be a year it will be the better; and should be often turned, that their parts may be better united, as also the clods well broken. This earth should not be screened very fine, for if you can only clear it of the great stones, it will be better for the plants than when it is made too fine. You should always avoid mixing any fand with the earth, unless it be extremely ftiff, and then it will be necessary to have it mixed at least fix months or a year before it is used; and it must be frequently turned, that the sand may be incorporated in the earth so as to divide its parts : but you should not put more than a fixth part of fand, for too much fand is very injurious to thefe

In the fummer feafon, when the weather is warm, these plants must be frequently watered, but you should not give them large quantities at a time: you must also be very careful that the moisture is not detained in the pots by the holes being stopped, for that will foon destroy the plants. If the season is warm, they should be watered twice a week, but in a cool season once a week is often enough; and during the fummer feafon you should once a week water them gently all over their leaves, which will wash the filth from off them, and thereby greatly promote the growth of the plants.

There are some persons who frequently shift these plants from pot to pot, but this is by no means to be practifed by those who propose to have large well-flavoured fruit; for un-or. II.

less the pots be filled with the roots, by the time the plants begin to shew their fruit, they commonly produce fmall fruit, which have generally large crowns on them, therefore the plants will not require to be new potted of-tener than twice in a feafon: the first time should be about the end of April, when the fuckers and crowns of the former year's fruit (which remained all the winter in those pots in which they were first planted) should be shifted into larger pots, that is, those which were in halfpenny, or three-farthing pots, should be put into penny, or at most three-halfpenny pots, according to the fize of the plants; for you must be very careful not to over pot them, nothing being more prejudicial to these plants. The second time for thirting of them is in the beginning of August, when you should shift those which are of a proper fize for fruiting the following fpring, into two-penny pots, which are full large enough for any of these plants. At each of thefe times of shifting the plants, the bark-bed should be stirred up, and some new bark added, to raise the bed up to the height it was at first made; and when the pots are plunged again into the bark-bed, the plants thould be watered gently all over their leaves, to wash off the filth, and to fettle the earth to the roots of the plants. If the bark-bed be well stirred, and a quantity of good fresh bark added to the bed, at this latter shifting, it will be of great service to the plants, for they may remain in the fame tan until the beginning of November, or fometimes later, according to the mildness of the season, and will require but little fire before that time. During the winter feafon, these plants will not require so be watered more than once a week, according as you find the earth in the pots too dry; nor should you give them too much at each time, for it is much bester to give them a little water often, than to over-water

You must observe never to shift those plants which shew their fruit into other pots, for if they are removed after the fruit appears, it will frop the growth, and thereby cause the fruit to be smaller, and retard its ripening, so that many times it will be October or November before the fruit is ripe; therefore you should be very careful to

keep the plants in a vigorous growing flate, from the first appearance of the fruit; for if they receive a check after this, the the fruit is generally small and ill tafted.

When you have cut off the fruit from the plant whose kind you are defirous to propagate, you should trim the leaves and plunge the pots again into a moderate hot-bed, observing to refresh them frequently with water, which will cause them to put our their fuckers in plenty; fo that a perfor may be foon fupplied with plants enough, because upon this depends its fize and goodness; if he keeps the plants in

There is not any thing which can happen to these plants of a more dangerous nature, than to have them attacked by fmall white infects, which appear at first like a white mildew, but soon after have the appearance of lice: these attack both root and leaves at the same time, and if not destroyed will spread over a whole flove in a short time, and in a few weeks ftop the growth of the plants, by fucking out the nutritious juice, fo that the leaves will appear yellow and fickly, and have a great number of yellow transparent spots all over them. These insects, after they are fully grown, appear like bugs, and adhere fo closely to the leaves, as not to be easily washed off, and feem to have no local motion. They were originally brought from America upon the plants which were imported from thence, and probably they are the fame infects which have destroyed the fugar canes in some of the Leeward Islands.

The stoves which are erected for preserving of these plants are built in different ways, according to the fancy of the contriver. Some persons build them with upright glasses in front, a-bout sour feet high, and sloping glasses over these, which rise about fix feet high, so that there is just height enough for a person to walk upright on the back side of the bark-bed. Others make but one flope of glaffes, from the top of the stove down to the plate, which lies about fix or eight inches above the bark-pit, in the front of the stove, so that in this stove there is no walk made in the front between the bark-pit and the glaffes; but the inconveniency of watering the plants, as also of coming near those plants

which are placed in the front of the flove to clean them, has, in some meafure, brought them into difefteem, so that few persons now build them, though the expence is much less than the other kind of stoves. One of thefe flores, about twenty-five feet long in the clear, with the pit for the tan reaching from end to end, and fix feet and a half wide, will contain about an hundred plants; so that whoever is desirous to have this fruit, may easily proportion their stove to the quantity of fruit they are willing to have.

But it will also be necessary to have a bark-pit under a deep frame, in order to raise the young plants in summer; for in this bed you should plunge the suckers, when they are taken from the old plants, as also the crowns which come from the fruit, fo that this frame will be as a nursery to raise the young plants to supply the stoye; but these plants should not remain in these frames longer than till the beginning of November, unless the frame is built with brick-work with flues in it to warm the air, which are very ufeful, as nurt feries, to keep the young plants till they are of a proper fize to produce fruit; and the air in this frame may be kept eiher warmer or cooler than the stove, according as the plants may require, fo that the stove may be every autumn filled only with bearing plants, whereby a much greater quantity of fruit may be annually produced, than can be where young and old plants must be crowded into the same flove: but where there are no inconveniencies of this kind, the young plants, about the middle or latter end of October, must be removed into the flove, and being fmall, may be crowded in among the larger plants; for as they will not grow much during the winter feason, so they may be placed very close toge-ther. The end of March, where there is no nurfery for the young plants, they must be removed out into the hot-bed again, which should be prepared a fortnight before, that the tan may have acquired a proper heat; but you should be careful that the tan be not too hot, for that might scald the fibres of the plants if they are suddenly plunged therein. Therefore if you find the bark too hot, you should not plunge the pots above two or three inches into the tan, letting them remain so until the heat of the tan is a little abated, when you should plunge the pots down to their rim in the bed. If the nights should continue cold after these plants are removed into the bed, you must carefully cover the glaffes with mats, otherwife by coming out of a warm stove they may receive a fudden check, which will greatly retard their growth, which must be carefully avoided; because the sooner the plants are fet growing in the fpring, the more time they will have to gain strength, in order to produce large fruit

the following feafon.

You should not plunge the pots too close together in this frame, but allow them a proper distance, that the lower part of the plants may increase in bulk, for it is on this that the magnitude of the fruit depends; because when the plants are placed too close, they draw up very tall, but do not obtain thrength; fo that when they are taken out of the bed, the leaves are not able to fupport themselves, but all the outward long leaves will fall down, leaving the fmaller middle leaves naked, and this fometimes will cause them to rot in the center. You must also observe, when the fun is very warm, to raise the glaffes of the hot-bed in the heat of the day with props, in order to let out the steam of the bed, and to admit fresh air; for one neglect of this kind, in a very hot day, may destroy all the plants, or at least so scald them, that they will not get over it in many months. It will be also very proper, in extreme hot weather, to shade the

There are some persons who regulate the heat of their stoves by thermometers in summer, but at that season this is unneceffary, for the outward air in hot weather is frequently greater than the ananas heat marked on the thermometers, fo that the heat of the stoves at that season will be much greater. The use of the thermometer is only in winter, during the time the fires are continued, by which it is eafy to judge when to increase or diminish the fires; for at that feafon the floves should not be kept to a greater warmth than five or fix divisions above ananas, divisions below it. When the plants cut early in the morning, before the

glasses with mats, for the glasses lying so near to the leaves of the plants will oc-

cafion a prodigious heat at fuch times.

are placed into the tan for the winter feafon (which should be done about the middle of October) the tan-bed should be renewed, adding two thirds of new tan to one third of the old. If this be well mixed, and the new tan is good, the bed will maintain a proper degree of warmth till February, at which time it will be proper to thir up the bed, and add a load or two of new tan, fo as to raife the bed as much as it funk fince the antumn; this will give a fresh hear to the bed, and keep the plants growing, and, as the fruit will now begin to appear, it will be absolutely necessary to keep the plants in a growing state, otherwise the fruit will not be large; for if they receive any check at this time, it will greatly injure them,

In April it will be proper to ftir up the tan again, and if the bed has funk fince the last stirring, it will be proper to add some fresh tan to it; this will renew the warmth of the bed and forward the fruit. And if the tan-bed is constantly kept in a good temper, and a sufficient quantity of air admitted every day to the plants, they will fucceed much better than in a cool bed

kept too close.

Those plants which shew their fruit early in February will ripen about June ; fome forts are at least a month or five weeks longer in ripening than others, from the time of the appearance of the fruit: but the feafon in which the fruit is in greatest perfection, is from the beginning of June to the end of September; though in March, April, and October, this fruit may frequently be feen in pretty good perfection, but then the plants have been in perfect health, otherwise they are seldom well flavoured.

The method of judging when the the fruit is ripe, is by the fmell, and from observation; for as the several forts differ from each other in the colour of their fruit, that will not be any direction when to cut them; for should they remain fo long as to become foft to the touch before they are cut, they become flat and dead, as they do alfo when they are cut long before they are eaten : therefore the furest way to have . this fruit in perfection, is to cut it the nor fuffered to be more than as many fame day it is eaten: but it must be

fun has heated the fruit, otherwise it will be hot, observing to cut the stalk as long to the fruit as possible, and lay it in a cool, but dry place, preferving the stalk and crown unto it until it is

Mr. Speechly, gardener to the Duke of Portland, has lately introduced oak leaves into the stove instead of Bark,

" I presume, says he, that the leaves of the oak abound with the same quality as the bark of the tree, therefore the fooner they are raked up, after they fall from the trees, the better; as that quality will naturally decrease during the time they are exposed to the

weather

" After being raked into heaps, they should immediately be carried to fome place near the hot-house, where they must lie to couch. I generally fence them round with some charcoalhurdles, or any thing elfe, to keep them from being blown about the garden in windy weather. In this place we tread them well, and water them, in case they happen to have been brought in dry. We make the heap fix or feven feet in thickness, covering it over with old matts, or any thing elfe, to prevent the upper leaves from being blown away. In a few days, the heap will come to a strong heat. For the first year or two that I used these leaves, I did not continue them in the heap longer than ten days or a fortnight; but in this I discovered a confiderable inconvenience, as they fettled fo much, when got into the hot-houfe, as foon to require a fapply. Taught by experience, I now let them remain in the heap for five or fix weeks, by which time they are properly prepared for the hot-house. In getting them into the pine-pits, if they appear dry, we water them again, treading them in layers exceedingly well, till the pits are quite full. We then cover the whole with tan to the thickness of two inches, and tread it well till the fur-face becomes smooth and even. On this we place the pine-pots in the manner they are to stand, beginning with the middle-row first, and filling up the spaces between the pots with tan. In like manner, we proceed to the next row, till the whole be finished. And this operation is performed in the fame manner as when tan only is used, leaves, they thrunk from the fides of

" After this, the leaves require no farther trouble the whole feafon through : as they will retain a constant and regular heat for twelve months without either stirring or turning; and if I may form a judgment from their appearance when taken out, (being always entire and perfect) it is probable they would continue their heat through a fecond year : but as an annual supply of leaves here is eafily obtained, such a trial, with us, is hardly worth the trouble of making. However, as a faving in leaves may be an agreeable object in places where they are less plentiful, I was induced to make the following experiments: In 1777, one of the pine-pits was filled with one part of old and two parts of new leaves, well mixed together. And last year, (1778) one pit was filled with old and new leaves in equal quantities. In both thefe experiments, I had the fatisfaction to find the pits, fo filled, to retain a heat through each feafon, equal to the other pits that were filled entirely with new leaves,

"Laft year (1778) I also used a confiderable quantity of the leaves after they were taken out of the hot-house in the early-made hot-beds, and found them to answer quite as well as fresh

" I must beg leave to observe, that when the leaves are intended to be used a fecond time, it will be proper at the taking them out of the pits, to remove fome few at the top, as also on each fide, because the leaves at the top and outfide of the pit, approach most to a

state of decay

" After this, the pines will have no occasion to be removed but at the stated times of their management, viz. at the shifting them in their pots, &c. when, at each time, a little fresh tan should be added to make up the deficiency arifing from the fetting of the beds; but this will be inconfiderable, as the leaves do not fettle much after their long couching. During the two first years of my practice, I did not use any tan, but plunged the pine-pots in the leaves, and just covered the surface of the beds, when finished, with a little faw-duft, to give it a neatness. This method was attended with one inconvenience: for by the caking of the

the pots, whereby they became exposed to the air, and at the fame time the heat of the beds was permitted to

" Many powerful reasons may be given why oak leaves (for having an opportunity of collecting an immense quantity of them here, I have not tried any other kinds) are preferable to tan-

ner's bark.

" First, They always heat regularly; for during the whole time that I have used them, which is near ten years, I never once knew of their heating with violence; and this is so frequently the case with tan, that I affirm, and indeed it is well known to every person conversant in the management of the hot-house, that pines suffer more from this one circumstance than from all other accidents put together, infects excepted. When this accident happens near the time of their fruiting, the effect is foon feen in the fruit, which always comes ill-fhaped and exceedingly small. Sometimes there will be little or no fruit at all; therefore gardeners, who make use of tan only for their pines, should be most particularly careful to avoid an over-heat at that critical feafon-the time of fhewing fruit.

Secondly, the heat of oak-leaves is constant; whereas tanner's bark generally turns cold in a very thort time after its furious heat is gone off. This obliges the gardener to give the tan frequent turnings in order to promote its heating. These frequent turnings, not to mention the expences, are attended with the worst consequences; for by the continual moving of the pots backwards and forwards, the pines are exposed to the extremes of heat and cold, whereby their growth is confiderably retarded; whereas, when leaves are used, the pines will have no occafion to be moved but at the times of potting, &c. - The pines have one particular advantage in this undiffurbed fituation; their roots grow thro' the bottoms of the pots and matt amongst the leaves in a furprifing manner. From the vigour of the plants, when in this fituation, it is highly probable that the leaves, even in this flate, afford them an uncommon and agreeable

Riche

of expence, which is no inconfiderable object in places where tan cannot be had but from a great distance, as is the case here, the article of carriage amounting to ten shillings for each waggon-load. Indeed this was the principal reason that first induced me

to make trial of leaves.

" My last ground of preference is the consideration that decayed leaves make good manure; whereas rotten tan is experimentally found to be of no value. I have often tried it both on fand and clay, also on wet and dry lands, and never could discover, in any of my experiments, that it deserved the name of a manure; whereas de-cayed leaves are the richeft, and, of all others, the most suitable for a garden. But this must only be understood of leaves after they have undergone their fermentation, which reduces them to a true vegetable mould, in which we experimentally know that the food of plants is contained-but whether that food be oil, mucilage, or falt, or a combination of all three, I leave to philosophers to determine. This black mould is, of all others, the most proper to mix with compost earth, and I use it in general for pines, and almost for all plants that grow in pots: For flowers, it is most excellent. The remainder of this vegetable mould may be employed in manuring the quarters of the kitchen-garden, for which purpose it is highly useful.
"Leaves mixt with dung make ex-

cellent hot-beds-and I find that beds, compounded in this manner, preserve their heat much longer than when

made entirely with dung."
He describes the different species of infects with accuracy; and the directions he gives for their destruction are plain to every understanding. It confifts in washing the pine-plants well

with the following liquor:

" Take one pound of quickfilver; put it into a glazed veffel, and pour upon it one gallon of boiling water, which let fland till it becomes cold; then pour off the water for use. Repeat this on the same quickfilver, (for it will retain its powers) till a sufficient number of gallons are provided to fill na veffel intended for the purpose. One in the form of a trough, that will hold "Thirdly, there is a faving in point - eight or ten gallons, is the most con-

venient, especially for the large-fized

plants.

"Then to every gallon of this mercurial water add fix ounces of foft green foap, diffolved in a portion of the prepared water. Let the mixture fland till it becomes about milk-warm, which is the degree of warmth it must be kept to during the time of dipping, which operation is performed in the

following manner:

" The pine plants being now ready, let them be put into the mixture, in which they should remain, with every part covered, for the space of three minutes; then take them out, first letting the tops decline for the mixture to drain out of their centres. The veffel should be immediately filled with fresh plants, and those taken out set in the open air to dry, with their roots downwards; for by placing them in that position, the mixture will descend and penetrate to the very bottom of the leaves in the centre of the plant, whereby the infects which are concealed rhere will be totally destroyed.

"It will be proper to do this work in a fine day, and as foon in the forenoon as convenient, that the plants might have time to dry, which they will do in a few hours, and then they must undergo the same operation a se-

cond time.

"In the next dipping, one table fpoonful of fweet oil should be added to every gallon of the mixture. If the oil and some green soap should be put together, and a little prepared boiling water poured thereon, the oil will most readily incorporate.

"The process of the second operation being exactly the same as the first, a repetition thereof is unnecessary.

"After the second dipping, a spunge should be used, to remove any unsightly matter lest on the leaves of the plants. They should then be set to dry with their tops downwards, that the mixture may drain from every part; for it is necessary that every part of the plant should be quite dry before it is planted.

"For a twelvemonth after the defiruction of the infects, I confiantly keep a pound of quickfilver in a glazed veffel, at the bottom of the ciftern which contained the water for the use of the hot-house. Whether the quick-

filver impregnated the water in such a manner as to be of any real use, I do not pretend to say: however, this I can with truth affirm, that I never saw pine plants grow with greater vigour than those did at that time."

Dwarf PINE. Tree Germander. Wild PINE APPLE. See PENGUIN. PINK, See CARNATION.

PINT. A veffel or measure containing in quantity fixteen ounces; half a quart; the eighth part of a gallon.

PIP. This is a diforder peculiar to young fowls, and generally arises from the want of water. The natural moi-flure of the mouth in this case hardens upon the end of the tongue into a kind of scale, and this prevents their feeding.

The greatest care is required to obferve in time which of them have the difease, for the remedy is easy.

Let some bay salt be melted in a little vinegar, and set ready in a saucer.—Then let the young creatures be taken up and the scale loosened, and then pulled off from the tongue with the singers. Then wet the end of the tongue two or three times over with the vinegar and salt, and turn the chick loose where he cannot drink for an hour. This will prevent a return.

PIPE. A large veffel for wine, equal

to two barrels; half a tun.

PIPE TREE, (Syringa) See LILAC.
Pudding PIPE TREE. See CASSIA.
PIPERIDGE Buft. See BARBERRY.
PISSING of Blood, in Horses. Great
care should be taken to observe the
quantity of urine made; if there be too
much in proportion to the liquor drank,
restringents should be made use of,
such as the following balls:

Japon Earth, two ounces,

Mithridate,

Diafcordium, each one ounce and a half, mix altogether in a pint and a half of forge water, and give it in a morning, repeating every third morning.

If on the other hand, urine is made in quantity, and feems made with dif-

ficulty,

Take Marshmallow Roots,

Liquorice Roots, each two ounces, boil in three pints of water to a quart. Diffolve in it two ounces of Nitre, and give for a dose night and morning.

of the hot-house. Whether the quick- in Let a clyster be given, made of a

Arong decoction of marshmallows and

fweet oil.

" This diforder in cows (fays a writer in the Farmer's Magazine) is often produced by a blow or aftrain, and in either case is dangerous; perhaps more fo than if it proceeded from an inward disorder, as a mortification is much to be feared; whereas an exalted flate of the urinous falts will fometimes produce the diforder, but a blow or firain to produce it must not only do an external violence to the muscles of the loins, (probably to the nerves them-felves) but also to the vessels of the but also to the vessels of the kidnies, and those which go from the kidnies to the bladder; and I have feen the whole in a state of mortification, and this from a ftrain which has not been thought of fufficient consequence to require medicines ;-but remember, that as your beaft cannot tell how great the injury is, you are to apply immediate remedies.

Take away fome blood. If the beaft be coffive, give the following emollient clyfter, immediately: Milk gruel, three pints; fweet oil, half a pint. And afterwards the following anodyne clyfter, twice or thrice a day: Sheep'shead broth, three pints; liquid

laudanum, one ounce.

Of all remedies in difeases of the bladder or kidnies, clysters are the most to be depended on; of which I was informed by an ingenious physical friend, who told me that in the most violent fits of the gravel, retention of urine, &c. he chiefly depended on anodyne clysters, which acted as a fomentation to the parts immediately concerned, and gave a more immediate relief than medicines taken by the mouth.

"If the disorder proceed from a strain or blow, the loins should be bathed with Goulard's vegeto-mineral water, and then covered with cloths. The beast should be kept up at house, and well supplied with warm gruel, or ra-

ther the following liquor :

Take two dozen of white poppy heads, feeds and all; liquorice, marfimallow, and couch grafs roots, each half a pound; nitre, and gum arabic, each three ounces, camphor, one ounce and a half; boil in fix gallons of water-gruel to four, and then add a pound of

treacle. Give to the quantity of two gallons daily, a little warm.
"Different as the above prescription may be to the common method pursued by Cowleeches, I can recommend it not only as rational, but successful. Restringents are unadviseable"

PISHAMIN, or PERSIMON, (Diefpyrus) See DATE PLUM TREE.

PITCH TREE. The Fir Tree. PLANE TREE, (Platanus) this tree there are only two species. The true Eaftern Plane-tree, This kind grows naturally in Afia, where it be-comes very large; the stem is tall, erect, and covered with a smooth bark, which annually falls off; it fends out many fide-branches, which are generally a little crooked at their joints; the bark of the young branches is of a dark brown, inclining to a purple colour; they are garnished with leaves placed alternate; their foot-stalks are an inch and a half long; the leaves are feven inches long & eight broad, deeply cut into five fegments, and the two outer are flightly cut again into two more; thefe fegments have many acute indentures on their borders, and have each a strong mid-rib, with many la-teral veins running to the sides; the upper fide of the leaves is of a deep green, and the under fide pale. flowers come out upon longfoot-flalks or ropes hanging downward, each fuftaining five or fix round balls of flowers; the upper, which are the largeft, are more than four inches in circumference; these sit very close to the footfialks. The flowers are to mishout fearce to be diffinguished wishout glasses; they come out a little before the leaves, which is in the beginning of June; and in warm fummers the feeds will ripen late in autumn, and if left upon the trees will remain till fpring, when the balls fall to pieces, and the briffly down, which furrounds the feeds, helps to transport them to a great distance with the wind.

2. Occidental or Virginian Plane-tree.

This fort is naturally produced in most parts of North America; it grows to a large fize, with a straight stem of equal girt most part of the length; the bark is smooth, and annually falls off like that of the other; the branches extend wide on every fide; the young ones have a brownish bark, but on the

eld ones it is grey; the foot-stalks of the leaves are three inches long; the leaves are seven inches long, and ten broad; they are cut into three lobes or angles, and have several acute indentures on their borders, with three longitudinal midribs, and many strong lateral veins. The leaves are of a light green on their upper side, and paler on their under. The flowers grow in round balls like the former, but are smaller. The leaves and slowers come out at the same time with the former; and the seeds ripen in autumn.

The flowers come out late in the fpring, and are so small as scarcely to be visible to the naked eye. The buds of the leaves of the oriental fort begin to swell about the sourcearth of April, and the leaves are generally out by the latter end of the same month.

Befides the two species already deferibed there are two varieties: 1. The Spanish Plane-tree; 2. The Mapleleaved Plane-tree.

The Spanish Plane-tree has larger leaves than either of the other forts; they are more divided than those of the Occidental, but not so much as the Eastern. Some of the leaves are cut into five and others into three lobes; these are sharply indented on the edges, and are of a light green; the foot-stalks are short, and covered with a short down. This is by some called the Middle Plane-tree, from its leaves being shaped between those of the two other forts. It grows rather safter than either of the other kinds.

The Maple-leaved Plane-tree differs from the two genuine species, in having its leaves not so deeply cut as the Eastern, nor lobed as the Western kind. The foot-stalks of the leaves are much longer than those of the above sorts, and the upper surface of the leaves is

rougher.

The Oriental and Spanish Plane-trees are propagated from feeds, when they can be procured; but whoever enjoys not this convenience, must have recourse to layers. The ground proper for the seminary should be moist and shady, well dug, and raked till the mould is fine; then, in the autumn, soon after the seeds are ripe, let them be seattered over this ground, and the seeds raked in, in the same manner as turnip-seeds. In the spring many es

the young plants will come up, though you must not expect the general crop till the second year; the spring after which they may be taken out of the seminary, and planted in the nursery in rows one yard asunder, and at one foot and a half distance in the rows. Here they may remain, with the usual care of digging between the rows and keeping them clean, till they are of sufficient size to plant out for good.

ficient fize to plant out for good.

Where the feeds of these trees cannot be procured, layering must be the method of propagation. For this purpose a sufficient number must be planted out for stools on a spot of earth double dug. After they have stood one year, they should be cut down, in order to make them throw out young wood for layering. The autumn following these should be laid in the ground, with a little nick in the joint; and by that time twelvemonths they will be trees of a yard high, with a good root, ready to be planted in the nursery, where they may be managed as the seedlings; and as the stools will have shot up fresh young wood for a second operation, this treatment may be continued ad libitum.

The Occidental Plane-tree is propagated by cuttings; which if they are taken from ftrong young wood, and planted early in the autumn, in a moift good mould, will hardly fail of fucceeding. They are generally planted thick, and then removed into the nurfery-ground, as the layers of the other fort: But if a large piece of moift ground was ready, the cuttings might be placed at such a distance as not to approach too close before they were of a fufficient fize to plant out for good; and this would fave the expence and trouble of a removal. The Oriental Plane-tree will grow from cuttings, but not fo certainly as this; and whoever has not the convenience of proper ground for the cuttings of either, have recourse to layers with this tree alfo; which, indeed, is always the furest and most effectual method

Plane-trees delight in a moift fituation, especially the Occidental fort; where the land is inclined to be dry, and Plane-trees are defired, the other kinds are to be preferred. But in moift places, by the fides of rivulets, ponds, sec. the Occidental makes such surprising prifing progress as induces me to think that it might be ranked amongst the

Aquatics, without any impropriety.

PLANTAIN, (Plantage.) There are two kinds of this plant, the narrow and broad-leaved, both common in fields and by road-fides. The leaves are lightly aftringent, and the feeds faid to be fo; and hence they fland re-commended in harmorrhages, and other cases where medicines of this kind are proper. The leaves bruifed a little, are the utual application of the com-mon people to flight fiesh wounds.— The Edinburgh college directs an ex-tract to be made from the leaves.

PLANTAIN TREE, See BANANA. PLANTAIN SHOT. Indian Cane.

SA CANE.

PLANTATIONS. Plantations of trees, &c. greatly embellish and im-prove estates, as well as ornament the adjacent country; and those formed into woods for timber-trees, prove not only very beneficial to the owners, but may be fald to be a public convenience to the country around, to have the opto the country around, to have the opportunity of purchaing wood in the
neighbourhood, for the various purpoles of buildings, fencings, making
all forts of hufbandry implements, as
carts, waggons, ploughs, &c. and for
innumerable other uses; also for surnishing suel, a very effectial article.

In former ages, this island abounded in natural plantations or forests,

which fpread themfelves over the fur-face of the country, to a very confider-able extent, and were composed of vari-ousforts of lofty trees of prodigious mag-nitude, all blended promiscuously toonstores of norty trees of promiscuously together, and all of spontaneous growth.

Those vast forests were never planted by any human hand, such only have been employed for ages in cutting them down; for in many places there were such a profusion of useless wood, that large tracts were obliged to be cleared by degrees, in order to cultivate the ground for other purposes; which, together with the necessary demands for the timber from time to time for buildings, acc, and that owners of estates, resping considerable advantage from the sale of their timber, continued by degrees, one generation after another, grubbing up their timber without measure; and sew ever planted any in lieu of what they cut down; so that in Vol. II. Vol. II.

many parts there is almost a general demolition of woodland, and many confiderable effaces have fearcely any timber of value left flanding, whence comes the prefent fearcity in many parts of the kingdom.

parts of the kingdom.

Every possession of citates, either of large or moderate extent, will reap great pleasure and advantage in dedicating some share of his land to plantations; for in citates of whatsoever extent, they give grandeur and ornament to the premises, as well as an air of fertility and riches and those large plantations designed for woods, will, after the first eight or ten years, bring in great profit by a gradual thinning of the underwood, besides leaving a fufficiency of standards to attain full growth: In the mean time the plantations in general will contribute exceedtions in general will contribute exceedingly to the beauty of the effate; for how delightfully it is for travellers to behold the noble plantations in groves, thickets, clumps, &c. variously disposed in parks, and on the boundaries of foscious larges. spacious lawns, and the like pla formed of a great variety of beautiful trees and shrubs, and to see grand ave-nues of losty growth, leading to or from a stately mansion, or some main from a stately mansion, or some main road, or some adjacent town; and in the out-grounds to observe the Plantations of woodlands, &c. ranging along the fides of hills, plains, and other grounds occasionally; but in estates, how fertile soever the foil, yet it appears naked and barren without a proper share of plantations; ou the other hand, when estates are beautifully divertified with plantations, she whole may be said to form a fort of pleasure garden; especially as in the homeward plantations we may have commodious walks of gravel and sand, both private, shady, and sheltered walks, occasionally disposed in many winding turns in the services and slowers, which will afford most agreeable walking at almost any feason of the year, as an summer they afford a screen from the veternent hear of the sun, and at other times shelter from boisterous winds, and cold piercoing blasts; there may be also here and there reconses or places of retirement, leading by privace with aladines or occasional walks with aladines or occasional walks. ad, or fome adjacent town; and in leading by private turnings from the principal walks, with gladings or open-ings of grafs-ground in the midst of

the most extended parts of the plan-

No land-holder, therefore, let the extent be almost ever so moderate or considerable, but ought to appropriate a proportionable share to commodious plantations as soon as possible, either for ornament or emolument, or both, where the extent will admit, as there is hardly any estate that does not assort foil and situation proper for the cultivation of all our hardy trees, &c. and in many places often furnish soils improper for grass and corn, yet adapted to the growth of many sorts of trees, which would form good plantations, and secure to the planter and his posterity a future pleasure and revenue of considerable importance.

In short, there is hardly any soil so barren and untractable but what will rear a growth of trees and shrubs of some species or other, both for ornament and advantage; and there is scarcely any kind of tree so bad but may be raised to one or other of those purposes: any very poor ground, or such that lies waste, or at a great distance; cannot be better improved than in plantations; even although a tract of land should be so poor as to rear nothing but a crop of aspen trees, alder, and willows, yet the profits even of these productions will greatly exceed

what many may think.

So that there is a great number of examples to encourage, and warrant fucces in plantations, to reward not only with the pleasure of ornamenting our lands, and that of beholding their growth, but also with profit sufficient to compensate amply for the tract of land occupied, and labour in planting.

But to many persons, the necessary expence attending the making a plantation, and knowing that they must saveral years before the trees have

But to many perions, the necessary expense attending the making a plantation, and knowing that they must wait several years before the trees have made any confiderable progress, or can reap any advantage therefrom, often proves an obstacle in attempting the prosecution of that business; but as to the expense of planting, if you raise the plants in your own grounds, it will not prove near so great as many might imagine, especially as a small spot of seminary or nursery-ground will raise plants enough in three or sour years to plant a great many acres of land, both

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ornamental and woodland; and by the latter, the expense of raising and planting them, together with the loss of time in waiting a few years till the plants attain some growth, will be compensated by the first fall or thinning of the underwood, in eight or ten years after planting; and the stools or roots remaining shoot up again, and afford a lopping every eight or ten years, exclusive of the due portion of standards left at proper distances, to attain full growth for timber, as aforcsaid.

One particular precaution in making plantations, is the judicious choice of fuch trees as are the best adapted to the nature of particular soils, which may vary exceedingly in estates of great extent; however, such trees as we find daily growing by road-sides, hedgerows, and in any adjacent grounds, are rough sketches of what the land will produce.

As to the forts of trees and shrubs proper for plantations in general, there is a vast variety, both of the deciduous and ever-green tribes, that will prosper in the open ground in any common foil.

It is of importance, in making any confiderable plantation, to chuse principally young plants, of from about two or three to five or ten feet stature, which always prove more successful than older trees; for although some persons, being in haste to have plantations as forward as possible in a few years, transplant tall trees, perhaps twelve or sisten feet high or more, particularly for ornamental plantations, yet younger growth always take root sooner, and more simply establish themselves, so as to form considerably the sinest plantation; for although large trees of from ten to twenty feet height, especially of the deciduous kind, may with care be transplanted, so as to grow and probably thrive tolerably for some years, yet trees more than twelve or sisten seet high often fail, by not rooting sirmly like young plants, and after some years standing, have hardly made any shoots, and at last gradually dwindle and perish; therefore large trees should never be employed for plantations only on particular occasions, where a few may be necessary to

form an immediate shade or blind, &c. in fome particular place; but for general work, be perfuaded to employ chiefly young plants, either of your own raising, or purchased from the nurseries. And for timber plantations in particular, fuch plants should be chosen as are only from about two or three, to five or fix feet in height.

All the different forts of trees and firubs, proper both for ornamental and timber plantations, may be had at all the public nurferies moderately reasonable; though perfons, accommodated with scope of ground, may easily raise all the forts for their own private ufe: A fmall nursery will raise trees and fhrubs enough to plant many acres of

land.

Observe, that where plantations are intended principally for ornament, as great a variety as possible of the diffe-rent forts of hardy trees and shrubs should be employed, to afford the greater fource of entertainment; and fhould confift both of lefty and middling trees, down to the humbleft fhrub; difpofing the deciduous and evergreen plants principally in separate compartments; fometimes arranging the tree-kinds by themselves; some in running irregular plantations, towards the boundaries of spacious lawns, parks, paddocks, &c. others in avenues, groves, thickets, and clumps, as aforesaid, variously disposed in different parts; and sometimes arranging the trees and shrubs together, in forming shrubberies, wilderness, shady walks, and wood-works; placing the taller growth backward, and the lower in front; bordering the whole with the most beautiful flowering shrubs, and showy ever-greens, effometimes arranging the tree-kinds by whole with the most beautiful flowering shrubs, and showy ever-greens, efpecially next the principal walks and
lawns; observing to vary the form of
all the several compartments, sometimes by bold sweeps and curves outward and inward, of different dimenfions, other parts in long easy bends,
irregular projections and breaks, so as
to diversify the scene in imitation of a
natural plantation. Allow all the
forts proper distances, which may be forts proper diffances, which may be from five or ten to fifteen or twenty feet; for example, the tall trees defigned for continued plantations may be from ten to fifteen or twenty feet, varying the diffance in different parts, according as light and fhade, &c, may

be proper; and those in groves may, if open groves, be at fifteen or twenty if open groves, be at fifteen or twenty feet diffance, and close groves ten or twelve; for thickets, five or fix leet, or closer in particular places, where a very dark shade, or thick coverture of wood is required; and in clumps of trees, may allow from five or ten to twenty feet between the trees in each clump, varying the distance occasionally, as also the forts and numbers of trees in each, from two or three to ten or more: likewise the form of the clumps; some may be triangular others. clumps; fome may be triangular, others quadrangular, pentangular, &c. and fome in curves, others in firaight lines, to cause the greater variety. And as to the shrubbery clumps, and wilder-ness compartments, where the trees and fhrubs are employed promiscuously together, they may be planted from five to ten feet distant; the taller growth being placed backward eight or ten feet afunder, placing the lower plants gradually forward according to their gradation of stature, to the lowest in front, as above observed, at four or five feet distance: and if the trees and fhrubs of the plantations in general are disposed somewhat in the quincunx way, they will appear to the greater advantage.

But when defigned to form large plantations into woods, &c. composed principally of forest and timber-trees for profit, particular forts must be cho-fen, confishing both of deciduous and ever-green trees. Of the deciduous kinds chufing the oak, elm, afh, beech, chefnut, hornbeam, birch, alder, ma-ple, fycamore, plane-tree, poplar, lime-tree, walnut-tree, wild cherry-tree, mountain-afh, larch-tree, willow-tree, mountain-afh, larch-tree, willow-tree, hazel-tree, &c. and of the ever-greens, the pine-trees, firs, cedar of Lebanon, holly-tree, bay-tree, laurel-tree, yew-tree, ever-green oak, box tree, and fome others. The particular description and culture of all which forts, deciduous and ever-greens, are exhibited in their proper genera. They are all hardy, and will grow in almost any common foil, rich or poor, and mostly also in dry or moult ground, high or also in dry or moist ground, high or low; allotting, however, particular forts to very low marshy foils, such as the willow, sallow, and offer, poplar, alder, and other aquatics, which wall prosper in places that are in a manner.

covered with water, and are the most proper forts for the embellishing and improvement of such grounds: all the other forts will succeed in any other more upland places out of water; observing, with respect to disposition, the deciduous and ever-greens should generally be separate, as observed for the ornamental plantations. But the trees of the same tribe may sometimes be intermixed, and sometimes different forts in separate divisions or quarters, as oaks in one, elms in another, &c. remarking likewise in timber plantations, that all the trees should be planted pretty close together, i.e., not more than three or sour seet distance, in order that they may mutually draw each other up tall, more expeditiously, and to allow for a gradual thinning, as hereaster directed.

Informing woods, however, or plantations of timber-trees, the following hints in respect to planting them are

proper to be observed.

Let it therefore be remarked, that there are two methods practifed in forming plantations of woodlands; one is by raifing the trees from feed at once on the ground where the plantation is fintended to be, especially of the deciduous kind, and is effected by sowing the seed in drills, a yard asunder, and the plants always to remain where raifed, thinning them gradually: the other method is by previously raifing the plants in a nursery, till two or three feet high, then transplanting them into places allotted them, in rows of the above distance, to allow also for gradually thinning.

dually thinning.

Either of these two methods may be practised, as shall seem most convenient to the owner; but the former, namely, raising the plants where they are to remain, although it may be more expeditious, and at once get rid of the trouble of transplantation, yet they will require greater attendance for a sew years, till the plants have shot up out of the way of weeds; but on the other hand, the trees always remaining where raised, not disturbed by removal, probably may make the greater progress. The latter method, however, of raising the trees first in a nursery, is rather the most commonly practised, as being thought the least troublesome and expensive, with re-

covered with water, and are the most gard to the attendance at first of the proper sorts for the embellishing and young growth. However, every one improvement of such grounds: all the is at liberty to make the experiment as other sorts will succeed in any other sorts will succeed in any other.

gard to the attendance at first of the young growth. However, every one is at liberty to make the experiment as it suits his convenience.

The preparation of the ground for the final reception of the feed or plants of these plantations, is by deep ploughing and harrowing, upon such ground where the plough can be employed; where this, however, or any other tillage, is not practicable, we must use only young plants from the nursery, making holes, &c. at proper distances, for the reception of each plant; where, however, the ground can be tilled, it will prove very advantageous, performing it previously a year at least before; sowing it with a crop of turneps, or the like; when these come off, well plough and harrow the ground again, for the reception either of the seed or plants the ensuing season.

gain, for the receptor enter of the feed or plants the enfuing feafon.

The most proper feafon to perform this planting, either by feed or plants, is any time in dry-mild weather, from October or November till February, though November and February are rather the most eligible for most kinds of hardy tree feeds: however, where large tracts are to be planted, both methods must be pursued all winter, at every favourable opportunity.

If feed is intended, you must be well provided with feeds of the feveral deciduous trees in particular, which may be obtained at all the nurferies and emisent feed-shops; then, for its reception, draw surrows or drills about two or three inches deep, and three or four feet asunder, scatter the feed along the middle of the drills, and cover the earth evenly over them, the depth of the drills or surrows, and place scare-erows and traps to guard against the insults of birds and vermin.

But if defigned to form the plantation with young plants, previously taifed in beds in the nursery by the common method, let the following practice be observed: Chuse always young plants, only from two to three or five or fix feet high; and if very large plantations are intended, you may, to save time and trouble, take the plants immediately from the seed-bed, when one or two feet high, without giving them any previous transplantation in the nursery; though where the plantations are but moderate, it is most

eligible to plant them out previously in nurfery rows, to have two or three years growth; but for remarkable large plantations, this would be a very great trouble and expence. Being, how furnished with young plants, they are to be planted in rows, three or four feet alunder, as directed for the feed, and one or two feet apart in the lines : they may be planted either by opening fmall apertures or holes with the spade for each plant; or, if very fmall plants, it is fometimes performed by making only a flit or crevice with the spade for each plant; and fome oper n imall trenches the whole length, then one inferts the plants whilft another trims in the earth about their roots: fome again, in very large tracts, where the fituation admits of good ploughing and harrowing to divide and break the earth into fmall particles, open furrows with a plough, two persons being employed in depositing the trees in the furrows, whilf the plough following immediately with another furrow, covers the roots of the plants with the earth thereof.

The ground where the above plantations are made should be previously fenced all round with a deep ditch, &c. to guard against the encroachments of

Whilft these plantations are young, they must have some attendance to destroy weeds, which may be expeditiously executed by hoeing between the rows in dry weather, particularly by horse-hoeing; and this care will be needful for two or three years, especially the feedling plantations, till the trees are advanced out of the reach of weeds; after which no sarther trouble will be required until the trees are ready for the first fall or thinning, for poles, faggots, &c.

poles, faggots, &c.

In eight or ten years growth, they will be of a proper fize to begin the first fall by a moderate thinning, which will ferve for poles and faggot wood, to pay towards the expence of planting, &c. but begin lopping only part of the plantation the first year; thinning out the weakest and most unpromising growth first; leaving a fufficiency of the most vigorous plants pretty close, to grow up for larger purposes; the year following begin thinning another part, and so continue an

annual thinning-fall till got through the whole plantation; cutting each fall down near the ground, leaving the ftools to shoot out again, especially of the deciduous kinds, and by that time you have made the last fall, the first will have thot up, and ready to be cut again; so the returns of fallings may be contrived to be every fix, seven, eight, or ten years, or more, according to the uses the poles or wood are wanted for; and if larger poles, &c. are wanted, the fall may be only once in sourteen, eighteen, or twenty years, still, at every fall, being careful always to leave enough of the most thriving plants for sinal standards; leaving them pretty close at first, that they may mutually draw each other up in height; but may be thinned every succeeding fall as they encrease in bulk, and meet, so as to leave a sufficient quantity of the principal trees at proper distances to grow up to timber, which, in their turn, as they become fit for the purposes intended, may also be selled according as there may be a demand for them to the most advantage; having young ones from the stools coming up in proper succession as substitutes, so as the ground may be always occupied.

as the ground may be always occupied.
PLANTING. Planting is the art
of inferting plants, feeds, and roots,
in the earth, for the purpose of vegetation.

There are various methods of planting in practice for different forts of plants, feeds, and roots; fuch as hole planting, trenching-in planting, flit or crevice planting, holeing-in planting, drill planting, bedding-in planting, furrow planting, dibble planting, planting with balls of earth about the root, planting in port, &c. all of which methods of planting are occasionally used by different practitioners in the feveral branches of gardening, according as the feveral methods shall feem most eligible for different or particular firts of plants.

1. Hole-Planting.—This is the principal method practified in the final planting of all forts of trees and firuba in the full ground, by opening with a space round holes in the ground, at certain distances, one for the reception of each plant. Each hole should be digged capacious enough to admit all the roots of the tree or shrub freely

every way to their full spread, without touching the fides of the hole, and about one spade deep, or a little more or less, or according to the fize of the roots, fo as, when planted, the uppermost ones may be only about three inches below the common furface, or about as low as they were before in the ground, which is discoverable by examining the bottom of the ftem of the tree; though in very moist foils, where the water is apt to fland, the holes should rather be shallow, so as the uppermost roots may stand full as high as the general level, or higher if it shall feem necessary, raising the ground about them, especially in winter planting: let the holes, however, be of a proper width and depth, according to the above rules, loofening the bottom well; and if too deep, it is easily remedied in the time of planting, by shaking up the tree as you shall fee occasion; observing in digging out each hole, to lay the earth in a heap close to the edge, in order to be ready to fill in again; the holes being ready, then, having trimmed the roots, &c. of the trees, place one tree in the middle of the hole, making all its soots spread equally around, a per-fon holding the plant erest by the stem, whilst another with his spade eafts in the earth about the roots, taking particular care to break all large clods, and trim in some of the finest mould first all round about the roots in general, shaking the tree occasionally, to cause the fine soil to fall in close among all the small roots and fibres; at the same time, if the tree stands too deep, shake it up gently to the proper height, and having filled in the earth to the top of the hole, tread it gently all round, first round the outside to settle the earth close to the extreme roots, continuing the treading gradually to-wards the stem, to which tread the mould moderately firm, but no where too hard, only just to settle the earth, and fteady the plant in an upright po-fition: then pare in all the remaining earth evenly round the tree, to the width of the hole, raifing it fomewhat above the general level of the ground, to allow for fettling, giving it also a gentle tread, and finish it off a little hollow at top, bason-like, the better to receive and retain the moisture from

rains, and occasional waterings in fpring and summer, particularly to the choicer kinds of trees and shrubs.

choicer kinds of trees and shrubs.

After performing this planting, if in winter, or late in fpring, it may be of advantage to the choicer kinds of trees and fhrubs to mulch them, i. e. to lay fome long mulch at top of all the earth, both to keep out the winter's frost, and prevent the drying winds and drought of fpring and fummer from penetrating to the roots before the trees are well rooted in their new quarters. But some, instead of mulch, use grafs turfs, turned topfy-turvy, especially when planting upon any grafs ground, or any out-plantations where turfs of grafs can be obtained; or in orchards, where the ground is grafs; in which case it may be proper to bank some turfs round the sides and top of each hole, particularly for large trees, which will fleady them more effectually, as well as preferve the moisture, if much dry weather should happen the fucceeding fummer.

The above work, however, of mulching or turfing new-planted trees, is not abfolutely neceffary to our common hardy kinds of fruit-trees, forest-trees, and shrubs; though it may prove beneficial to all forts, but more particularly to the more tender kinds of wall fruit-trees, and more delicate forts of flowering-shrubs, choice ever-greens, and some kinds of herbaceous peren-

2. Trench Planting.—This method is fometimes practifed in the nursery-way, in putting out feedling and other small trees and shrubs in rows; is also used for planting box edgings; sometimes likewise for planting small hedge sets, &c. and always in planting Asparagus, and is performed by opening a long narrow trench with a spade, making one side applight, so place the plants against the upright side, and turn the earth in upon their roots.

3. Trenching in Planting. — This is also fometimes practised in light pliable-working ground, for planting young trees in the nursery-way, and sometimes in planting hedge sets, &c. and is performed by digging along by a line, about one spade wide, and planting as you go on. The method is this: a line is set, then having the plants ready, and with your spade beginning

ginning at one end, and flanding fideways to the line, throw out a spit of earth, which forming a fmall aperture, another person being ready with the another person being ready with the plants, he directly deposits one in the opening, whilst the digger proceeds with the digging one spade wide, covers the roots of the plants with the earth of the next spit; and another aperture being thereby also formed, place therein another plant, the digger still proceeding, covers its roots as ftill proceeding, covers its roots, as before, with the next fait of earth, and fo on to the end of the row; placing them at about a foot, or fifteen or eighteen inches afunder, according to the fize of the plants; observing, when planting larger trees with more spread-ing roots, by this method, that instead of digging the trench only one spade wide, two may probably be requisite for the proper reception of the roots; likewise in forming the opening for each plant, make it capacious enough to receive the roots freely, digging the earth over them as above. After have ing planted one row, either small of large plants, tread the earth evenly along to settle it to the roots, and steady the plants all equally upright.

4. Slit Planting.]—This method is performed by making flits or crevices with a spade in the ground, at parti-cular distances, for the reception of small trees and shrub plants. A slit being made for each plant, which are inferted as you go on; and is practifed fometimes in the nurfery-way, &c. in putting out rows of fmall plants, fuckers, &c. at from about a foot to eighteen inches or two feet high, and that have but fmall roots; it is also fometimes practifed for final planting in out-grounds, where very large tracts of forest-trees are intended, and that they are to be planted out at the above fizes, and by the most expeditious and cheapest method of planting; the fol-

lowing is the method

A line is set, or a mark made accordingly; then having a quantity of plants ready, for they must be planted as you proceed in making the slits, a man therefore having a good clean spade, he strikes it into the ground with its back close to the line or mark, forms a crevice, taking it out again directly, fo as to leave the flit open, gives another firoke at right angles with the first,

then the person with the plants inferts one immediately into the fecond-made crevice, bringing it up close to the first, and directly press the earth close to the plant with the foot; proceeding in the same manner to insert another plant; and so on till all is finished, which is a very expeditious way of putting our small plants, for any considerable plants. ttion. - A man and a boy by this method will plant ten or fitteen hundred, or more in a day.

5. Holeing-in Planting.] This is fometimes used in the nursery way in

light loofe ground, also sometimes in planting potatoes, &c. in pliable soils. The ground being previously digged or trenched, and a line placed, they proceed thus: a person with his spade takes out a small spit of earth, to form a little aperture, in which another perfon directly deposits a plant, &c. the digger at the same time taking another spit at a little distance, turns the earth thereof into the first hole over the roots, placing directly another plant in this fecond opening, the digger covers it with the earth of a third, and so on to

the end of the row.

6. Drill Planting.]—This is by drawing drills with an hoe from two to four or five inches deep, for the reception of feeds and roots, and is a commodious method of planting many forts of large feeds, fuch as walnuts, chefnuts, and the like; fometimes also broad beans, but always for kidney-beans, and peas: likewise for planting many forts of bulbous roots, when to

be deposited in beds by themselves.

The drills for all which purposes should be drawn with a hoe, two or three inches deep; though for large kinds of bulbous roots, four or five inches depth will be requifite, cover-ing in the feeds and roots with the

earth, always the depth of the drills,
7. Bedding in Planting. This is, frequently practifed for planting the choicer kinds of flowering bulbs, fuch as Hyacinths, &c. also for larger feeds of trees, as acorns, large nuts, and other larger kinds of feeds, stones, and kernels, and is performed by drawing the earth from off the tops of the beds fome inches depth, then planting the feeds or roots, and covering them over with the earth, drawn off for that purpose; after the following method:

The ground must be previously digged or trenched, raked, and formed into beds three or four feet wide, with alleys between bed and bed; then with a rake or spade trim the earth evenly from off the top of the bed into the alleys, from three to four or five inches deep for bulbous roots, and for seeds, one or two, according to what they are, and their fize; then, if for bulbous roots, draw lines along the surface of the bed, nine inches distance, place the roots bottom downward, along the sheet, fix or eight inches apart, but, if seeds, they may be scattered promiseuously; and having thus planted one bed, then with the spade, let the earth that was drawn off into the alley, be spread evenly upon the bed again over the roots or seed, &c, being sareful to cover all equally the above cepth, and to rake the surface smooth. This method is much in practice

This method is much in practice among florists for the choicer forts of

bulbous flowers.

The nurferymen also practise this method in planting many of their larger

feeds, nuts, &c.

8. Furrow Planting.]—This is by drawing furrows with a plough, and depositing sets or plants in the surrow, covering them in also with the plough, and is sometimes practised for planting potatoe-fets in fields, and has been practised in planting young trees for large tracts of forest-tree plantations, where the cheapest and most expeditious method is required; but this method can be practised only in light pliable ground, and is performed thus: A surrow being drawn, one or two persons are employed in placing the sets or plants in the furrow, whilst the plough following immediately with another furrow, turns the earth thereof in upon the roots of the plants:

the roots of the plants.

9. Dibble Planting.]—This is the most commodious method for planting most forts of fibrous-rooted seedling plants, particularly all the herbaceous tribe; also for planting slips, off sets, and cuttings, both of herbaceous and shrubby kinds; likewise for some kinds of seeds and roots, such as broad-beans, potatoe-fets, set lerusalem artichokes, and horse-radish-sets, with numerous forts of bulbous roots, &c. and is expeditiously performed with a dibble or setting-stick, therewith making a nar-

row hole in the earth for each plant, inferting them in each hole, always as you go on; observing the following hints:

Having a dibble, or fetting-flick, it is used by thrusting it into the earth in a perpendicular descent, in depth as the particular plants, &c. may require; directly inferting the plant, feed, or fet, according as each hole is made, closing the hole immediately by a ftroke of the dibble. So proceed dibbling the holes and planting as your of the dibble. So proceed dibbling the holes, and planting as you go on, at particular distances and depths, according to the nature of the plants, &c. observing, in setting any kind of plants, single flanks or stems, it is proper to make holes a proper depth, to admit them some confiderable way in the ground; fore confiderable way in the ground; for example, cabbage-plants, favoys, &c., fhould be planted down to their leaves; flips and cuttings fhould be inferted two parts of three, at leaft, in the ground; being particularly careful, in dibbling-in all forts of plants, to clote the holes well in every part about the roots, by firiking the dibble flantways into the ground, fo as to firike the mould first firmly up to the root and fibres, at the fame time bringing and fibres, at the fame time bringing it close to the ftem; for in dibble plant-ing, many only firike the earth about the neck of the plant, and the lower part of the hole is often left hollow about the roots; but by firiking the dibble first at the root part, you fix the plant effectually, then a stroke of the dibble at the top of the ground finishes, by closing up every part of the aperture. In this manner continue planting and finishing each hole as you go on, perfectly close, that neither the fun, air, nor penetrating winds, can enter, this being of much importance, but often difregarded, as we may often fee the holes that are necessarily made in fixing the plants left open, though each hole at the infertion of its plant, at one firoke of the dibble, may be elofed with the utmost facility.

the Roots. This is the removing a plant with a large ball of earth about its roots, so as the plant by having its roots firmly attached to the surrounding ball of earth, it still, during the operation, continues its growing state without receiving any or but very little

check

check from its removal; and is often practifed more particularly to the more delicate and choicer kinds of exotics, both trees, firubs, and herbaccous plants! likewife when intended to replants! likewise when intended to remove any fort of tree or plant out of the proper planting feafon, as very late in the fipring, or in fummer, it is eligible to transplant it with a good ball of earth, to preferve it more certainly in a flate of growth. Observing, some trees and shrubs are more difficult to remove with a ball than most kinds of herbaceous sibrous-rooted plants, tho many of the tree and shrubs kinds, having very sibrey roots, they will also readily rise with good balls.

But when trees or shrubs, with balls to their roots, are intended to be sent to any considerable distance, they should be placed in offer baskets, in order to preserve the cohesion of the ball, saving a basket for each tree.—
In planting them, if they cannot be readily moved out of the baskets without disturbing the ball of earth, plant basket and all; cut it here and there in the sides, and throw some fine mould move any fort of tree or plant out of

the fides, and throw fome fine mould clote all round to as to join with that of the ball, and give a watering to fet-tle it more effectually close; the roots and fibres will readily make their way. through the fides of the backet; be-fides, the backets will foon rot, without proving any obstruction to the growth of the plants.

of the plants.

The advantage in planting with balls, either in the full ground, or in pots, is, the root of the plant being enclosed in the ball of earth continues all the while drawing hourithment, and the growth of the plant is not retarded in waiting till it has taken fresh root in its new place, which may be of advantage in many places, particularly all tender plants, forme of our choicest ever-greens, and many kinds of herbaceous flower plants.

But planting with balls is not recommended for general practice; for all

commended for general practice; for all the hardy tree and fluid kind, it would be needless as well as very expensive and troublefome.

it. Planting in port.]—This is practifed to all tender exotics, in order for moving them to thiefter occasionally, fuch as all kinds of green-house and hot-house plants; and it is likewise practifed for many forts of hardy flower-Vol. II.

ing-plants, for the convenience of moving fome curious forts when in flower to occasional theiter from the fun's rays, and excessive rains, in order to preserve their beauty, and prolong the time of their bloom; such as the sine auriculas, carnations, &c.

In planting in pots, it is highly requifite carefully to adapt the fizes to the fize and nature of the different plants intended to be potted; if small plants, begin first with small pots, one plant only to each pot, especially if to remain; but according as the different plants advance in growth, this them into pots one or two fizes larger, which may be requifite to many forts once a year, to others once in two or once a year, to others once in two or three years, according to the nature and increased growth of the respective plants; though to some forts of annuals it may be necessary once or twice in the course of a season; all of which is generally particularized in the culture of the various forts. And by thus beginning first with small pots adapted to the fize of the plants, it is not only cheaper and more commodious for moving and stowing them in different

cheaper and more commodicus for moving and stowing them in different parts occasionally, till they gradually advance in growth, but by thus shifting them into pots a size larger, it admits of adding fresh earth, which proves highly beneficial to their growth.

Garden pots, for the reception of plants, are of several regular fizes, from two to sixty in a cast, so are distinguished at the pot-houses accordingly, as twos, sixes, twelves, fixteens, twenty-sours, thirty-twos, forty-eights, fixteen pot having one or more apertures at bottom to discharge the superfluous moisture. They are fold by the potters at so much per cast, large and small, all of a price; those of only two in a cast the same as those of fixty; and cast the same as those of fixty; and from two stillings to half a crown per

call is the general price.

But, with respect to the particular method of planting in pots in general, the following particulars are necessary to be observed.

Having the pots and mould ready for the reception of the intended plants, observe, previous to planting them, to place some pieces of tile, potsherds, or oyster-shell over each slote at the bottom of the pots, both to prevent the holes

being clogged and stopped with the earth, and the earth from being washed out with occasional watering; also to prevent the roots of the plants getting out; then having secured the holes, put some earth in the bottom of each pot, from two or three to five or fix inches or more in depth, according to the fize of the pot, and that of the roots of the plant; this done, insert the plant in the middle of the pot upon the earth, in an upright position, making its roots, if without a ball of earth, spread equally every way, directly adding a quantity of fine mould about all the roots and fibres, shaking the pot to cause the earth to settle close thereto; at the same time, if the root earth, and the earth from being washed thereto; at the same time, if the root sand too low, shake it gently up as you shall see occasion; and, having filled the pot with earth, press it gently all round with the hand, to settle it all round with the hand, to fettle it moderately firm in every part, and to feady the upright possure of the plant, raising the earth however within about half an inch, or less, of the top of the pot, it will settle lower; for some void space at top is necessary to receive waterings occasionally: as soon as the plant is thus potted, give directly a moderate watering, to settle the earth more effectually close about all the roots, and promote their rooting more expeditiously in the new earth; repeating the waterings both before and after they have taken root, as occasion requires.—Mawx.

Observations on planting Trees in general.

The first thung in the planting of trees is to prepare the ground (according to the different forts of trees you intend to plant) before the trees are taken out of the earth; for you should suffer them to remain as little time out the ground as possible.

fuffer them to remain as little time out the ground as possible.

In taking up the trees, you should carefully dig away the earth round their roots, so as to come at their several parts to cut them off; for if they are torn out of the ground without care, the roots will be broken and bruised very much, to the great injury of the trees. When you have taken them up, the next thing is to prepare them for planting; in doing of which, there are two things to be principally there are two things to be principally regarded; the one is to prepare the roots, and the other to prune their heads in such a manner, as may be

most serviceable in promoting the fu-

most serviceable in promoting the suture growth of the trees.

And first, as to the roots; all the
small fibres are to be cut off as near to
the place from whence they are produced as may be (excepting ever-greens,
and such trees as are to be replanted
immediately after they are taken up;)
otherwise the air will turn all the small
roots and fibres black, which, if permitted to remain on when the tree is
planted, will grow mouldy and decay,
and thereby greatly injure the new
sibres which are produced, so that
many times the trees miscarry for want
of duly observing this. After the sibres
are cut off, you should prone off all the
bruised or broken roots smooth, otherwise they are apt to rot, and distemper
the trees; you should also cut out all
irregular roots which cross each other, wife they are apt to rot, and diftemper the trees; you should also cut out all irregular roots which cross each other, and all downright roots (especially in fruit-trees) must be cut off; so that when the roots are regularly pruned, they may in some measure resemble the singers of a hand when spread open; then you should shorten the larger roots in proportion to the age and strength of the tree, and also the particular forts of trees are to be considered; for the walnut, mulberry, and some other tender-rooted kinds, should not be pruned so close, as the more hardy sorts of spuit or forest-trees, which in young fruit-trees, such as pears, apples, plumbs, peaches, &c. that are one year old from hudding or grafting, may be left about eight or nine inches long, but in older trees they must be left of a much greater length; but this is to be understood of the larger roots only, for the small ones must be cut quite out, or pruned very short. Their extreme parts, which are generally very weak, commonly decay after moving, so that it is the better way entirely to displace them.

The next thing is the pruning of their displace them.

The next thing is the pruning of their heads, which must be differently performed in different trees, and the defign of the trees must also be considered; for if they are fruit-trees, and in-tended for walls or espaliers, it is the better way to plant them with the greatest part of their heads, which should remain on until the spring, just headers the trees been to shoot, when before the trees begin to thoot; who they must be out down to five or a eyes, being very careful, in doing

this not to diffurb the new roots. But if the trees are defigned for standards, you should prune off all the small branches close to the places where they are produced as allo irregular branches which eross each other; and by their motion, when agitated by the wind, rub and bruise their bark, so as to occasion many times great wounds in those places; besides, it makes a disagreeable appearance to the sight, and adds to the closeness of its head, which should be always avoided in fruit-trees, whose branches should be preserved as far distant from each other, as they are usually produced when in a regular way of growth (which is in all forts of trees this not to difturb the new roots, But of growth (which is in all forts of trees proportionable to the fize of their leaves and magnitude of their fruit.) But to return: After having displaced these branches, you should also cut off all fuch leaves and statement of their leaves at the statement of t fuch parts of branches as have by any accident been broken or wounded; for those will remain a disagreeable fight, and often occasion a different in the tree. But you should by no means cut off the main leading shoots, as is by too many practifed, for those are necessary to attract the sup from the root, and thereby promote the growth of the tree.

Having thus prepared the tree.

tract the flip from the root, and thereby promote the growth of the tree.

Having thus prepared the trees for planting, we must now proceed to the placing them into the ground; but before this, we would advise, if the trees have been long out of the ground, fo that the roots are dried, to place them in water eight or ten hours before they are planted, observing to put them in such mainter, as that their heads may remain erect, and their roots only immersed therein, which will swell the dried vessels of the roots, and prepare them to imbibe nourishment from the earth. In fixing of them, great regard should be had to the nature of the soil, which, if cold and moist, the trees should be planted very shallow; as also, if it be a hard rock or gravel, it will be much the better way to raise a hill of earth where each tree is to be planted, than to dig into the rock or gravel, and fill it up with earth (as is too often practised,) whereby the trees are planted as it were in a tub, there being but fittle room for their roots to extend; so that after two or three years growth, when their roots have extended to the side of the hole, they are stopped by the rock or gravel, so can get no farther, and the trees will decline, and

In a few years die. But when they are raifed above the furface of the ground, their roots will extend, and find nou-rithment, though the earth upon the rock or gravel be not three inches thick, as may be frequently observed, where

as may be frequently observed, where trees are growing upon such foils.

Having thus planted the trees, you mould provide a parcel of stakes, which should be driven down by the sides of the trees, and fastened thereto to support them from being blown down, or displaced by the wind, and then say some mulch upon the surface of the ground about their roots, to prevent the earth from driving.

forme mulch upon the furface of the ground about their roots, to prevent the earth from drying.

This is to be understood of standard trees, which east their leaves; for such as are planted against walls, should have their branches sastened to the wall to prevent the trees from being displaced by the wind, and place their roots about five inches from the wall, inclining their heads thereto; and the spring following, just before they shoot, their heads should be cut down to five or fix buds.

As to the watering of all new-planted trees, we should advise it to be done with great moderation, nothing being more injurious to them than over-watering. Examples enough of this kind may have been seen in many parts of England; and by an experiment made by the late Rev. Dr. Hales, in placing the roots of a dwarf Pear-tree in water, the quantity of moisture imbibed decreased very much daily, because the say-vessels of the roots, like those of the cut-off boughs in the same experiment, were so saturated and clogged with moisture, by standing in water, that more of it could not be drawn up. And this experiment was tried upon a tree, which was full of leaves, and thereby more capable to discharge a large quantity of moisture shad und trees as are entirely destitute of leaves, fo that it is impossible such trees can thrive, where the moisture is too great about their roots.

The distance which trees should be planted at, must be proportioned to their several kinds, and the several purposes for which they are intended; but their several kinds, and the several purposes for which they are intended; but their several kinds, and the several purposes for which they are intended; but their several kinds, and the several purposes for which they are intended; but their several kinds, and the several purposes for which they are intended; but their several kinds, and the several purposes for which they are intended; but their several kinds, and the several purposes for which they are intended; but

pofes for which they are intended; but fruit-trees, planted either against walls, or for espaiers, should be allowed the following distances; for most forts of vigorous-shooting pear-trees, thirty-

fix or forty feet; for apricots, fixteen or eighteen feet; apples, twenty-five or thirty feet; peaches and nectarines, twelve feet; cherries and plumbs, twenty-five feet, according to the goodnefs of the foil, or the height of the wall.

It is common to hear persons remarking, that from the present spirit of planting, great advantages will accrue to the public by the increase of timber; but whoever is the least skilled in the growth of timber, must know, that little is to be expecied from most of the plantations which have lately been made; for there, are sew persons who have had this in their view when they commenced planters, and of those sew scarce any of them have set out right; for there never was any valuable timber produced from trees which were transplanted of any considerable size, nor is any of the timber of the trees which are transplanted young, equal in goodness to that which has grown from the seeds unremoved. Beside, if we consider the sorts of trees which are usually planted, it will be sound, that they are not designed for timber; so that upon the whole, it is much to be doubted, whether the late method of planting has not rather been prejudicial to the growth and increase of timber than otherwise.

Most people are so much in a hurry about planting, as not to take time to prepare their ground for the reception of trees, but frequently make holes and stick in the trees, amongst all forts of rubbish which is growing upon the land: nor has any care been afterward taken to, dig the ground, or root out the noxious plants; but the trees have been left to struggle with these bad neighbours, which have had long possession of the ground, and have established themselves so strongly, as not to be easily overcome; therefore what can be expected from such plantations?—This is to be understood of deciduous trees; for the pines and firs, if once well rooted in the ground, will soon get the better of the plants and destroy them.

Every person who proposes to plant, should prepare the ground well beforehand, by trenching or deep ploughing it, and clearing it from the roots of all bad weeds, for by fo doing there will be a foundation laid for the future fuccels of the plantation. Also we advise no person to undertake more of this work than he can afterward keep clean, for all plantations of deciduous trees will require this care, at least for feven years after they are made, if they hope to fee the trees thrive well. Therefore all fmall plantations should have the ground annually dug between the trees, and as to those which are large, it should be ploughed between them. This will encourage the roots of the trees to extend themselves, whereby they will find a much greater share of nourishment, and by loofening of the ground, the moisture and air will more eafily penetrate to the roots, to the no finall advantage of the trees. But be-fides this operation, it will be absolutely necessary to hoe the ground three or four times in fummer, either by hand or the hoe plough. This will be objected to by many, on account of the expence; but if the first hoeing is per-formed early in the spring, before the weeds have gotten ffrength, a great quantity of ground may be gone over in a fhort time; and if the feafon is dry when it is performed, the weeds will prefently die after they are cut; and if this is repeated before the weeds come up again to any fize, it will be found the cheapest and very best huf-bandry; for if the weeds are suffered to grow till they are large, it will be a much greater expense to root them out and make the ground clean; befide, the weeds will rob the trees of great at of their nourithment. We have fometimes been told, that it is necessary to let the weeds grow among trees in fummer, in order to hade their roots, and keep the ground moil ; but this has come from persons of no skill. For if weeds are permitted to grow, they will draw away all moisture from the roots of the trees for their own nourishment, so that the trees will be thereby deprived of the kindly dews and gentle showers of rain, which are of great fervice to young plantations; and these will be entirely drawn away by the weeds, which will prevent their penetrating of the ground, fo that it is only the great rains which can descend to the roots of the trees. And whoeyer has the least doubt of this matter,

the trees will don! ads

if they will but try the experiment, by keeping one part of the plantation clean, and fuffer the weeds to grow on another, they will foon be convinced of the truth by the growth of the trees And though this cleaning is attended with an expence, yet the fuccess will overpay this, belide the additional pleafure of feeing the ground always

PLIANT MEALEY TREE, See WAY-

PLOUGHING. Ploughs feem to have been invented in the rudeft times, and, till very lately, to have had little improvement. What has been done on this head, however, by fome inge-nious persons within these sew years, thews what is practicable; and we hope will lead others to the fame eferul

The first kind of tillage was probably with the spade, and were that as convenient for large quantities of ground, as it is useful where it can be properly employed, no instrument in the world could be compared to it. But when whole fields came to be turned up and tilled, it was natural to devife fome method of faving the labour of men ; and confequently, the plough which may be called a kind of Tpade

drawn by horfes, was invented.

As this was more and more frequently used, its form became probably a little altered, but improvements have been in nothing to flow: and this in-firument, of such universal use, and vast advantage and importance to mankind, is fill capable of many more;

and it still wants them.

All tillage, it is evident, has its ad-vantage from dividing and breaking the earth into a great many parts. The spade, as it is wrought by the hand of the workman, does this most perfectly, and it is for this reason that gardens are more fertile than fields; but it may not be impefible, if proper perfors will fet themselves about it, now that they know in what the greatest per-fection of tillage confists, to make the plough, by more improvements, equal its effect.

The advantage of the spade over the plough is, that it goes deeper, and divides the land into more particles, and fmaller si but the plough, when its Arudure shall be fully perfected, is certainly capable of this. The fourcoultered plough is an excellent con-trivance, and flews, that there is no-thing impracticable in the thought of forming a plough that shall go deeper, and divide the earth as much or more than the spade.

The ancient plough, according the best accounts we have of it, no coulter, nor earth-board, for the there, always going obliquely, terved as an earth-board; and the two ears which were the corners of a piece of wood lying under the share, did the

This fort of plough is used in Italy, and even in some parts of France at this time. It serves for the turning up of light land, but it would do nothing with our lift and tough foil in many counties.

This, fo far as we know, was the first and original plough, and it is very plain and simple contrivance. did the office for which it was intended in the place where it was invented; but it was not fit for other lands, and other countries, and therefore it was

In those parts of Italy, where the foil is perfectly fost and mellow, th infirement does very well to keep it in tillage; but even in these fivourable lands it is very unfit for the bringing them into this condition; for when they have lain in grass, and have any turf upon them, it is very difficult to manage them with it. They are obliged to go two or three times over the land before the turf is all broken.

These ploughs, for want of a coul-ter to cut the turf, tear it to pieces with great awkwardness and difficulty, but when it is once cut through, the foil being foft and tender, they eafily

As our foil is very different from that of those countries, our ploughs are ne-cessarily made different, for otherwise they could not cut it. The necessity of a coulter to ours is very plain, be-cause of the thickness to be cut, and that necessity was doubtless the most of the invention. Our ploughs, whe well made, cut off the furrow at the bottom flatwife, and therefore it is as thick on the land fide as on the furrow fide: but the plough cannot break it off from the whole fand at fuch a

thickness.

thickness, so that there must be a coulter to cut it off. By this means the furrow is turned perfectly whole, and no part of the turf of it is broken.— Hence if it lie long without new turning, the grafs from the edges will foread, and form a new turf or fward on the other fide, which was the bot-tom of the furrow before turning, but s now become the furface of the

If the land be left thus, it will foon be greener with grafs than it was be-fore ploughing, and the grafs, spread-ing its roots, will bind it firmly and toughly together; so that there will require a great deal of time and labour to bring it into a condition for the service it is intended to answer.

This has shewn the insufficiency of

the common plough, and from a fense of this, has arisen the invention of the four coultered kind, to be described

hereafter. Several others have been deviled to answer the same purpose, but none succeed so well.

Of the several kinds of Ploughs in common use in England.

The common plough differs very much in shape and form in various places; partly according to the same of the people, and partly to the nature. places; partly according to the fancy of the people, and partly to the nature of the ground. Some have longer and fome thorter beams; and there are great varieties in the length and form of the share, the conster, and the

handles.

In general, without regarding the customs of particular places, there is great reason to have respect to the nature of the soil on which it is to be used. Thus, in general, the plough that is for stiff clay should be long, large, and broad, with a deep head, and square earth-board, so that it may turn up a large surrow. The coulter should be long, and very little bendshould be long, and very little bend-ing, with a very large wing; and the foot long and broad, so as to make a deep surrow. The plough for mode-rate soils should be somewhat smaller rate foils should be formewhat smaller than the former, but broad at the breech; the coulter should be long and more bending, and the share narrow, with a wing coming up to arm and defend the earth-board from wearing. The plough for light soils, such as sandy and the like, should be lighter and smaller than any of these. The

coulter should be more direular and

thinner, and the wing not fo large.

This is a direction contained in a fmall compais, yet it will give the farmer the general rule for his conduct in this refpect; let him confider his foils under these three heads of heavy, moderate, and light, and in this general manner suit the bulk and fabric of his plough to them, and he will never make any great errors.

Ploughs are fometimes made with

wheels, and fometimes without, but in general the wheels are a very great advantage; there are circumstances in which they are troublesome, and therefore it is fit they should be in some ploughs omitted.

The plough, which, from its great advantage above the others, might be efteemed the first great improvement in England, is the wheel-plough; that from the place where it was first used has been long called the Hertsord-shire plough. This confists of about and handle, a neck; an earth-board, a

fheath, a share, a coulter, a pin, pillow, and wheeh.

This Hertfordshire plough, or common wheel-plough, as it is usually mon wheel-plough, as it is utually made, is very firong, and is ferviceable for most uses: it is very easily managed, it follows the horse lightly, and it suits almost every kind of land. The greatest exception to its use is in mirry clay in winter; because the witeels out into thom, and clog and flick when they are work'd at that time of the year. This is fit for that fort of ground when furnmer fallows are to be plough-ed, and when a grafs ground is to be turned up for trable, for it turns the turf very well, and is very fit for uneven ground, and for the drieft furnmer weather. Some make this plough in the original manner, with the handle floping of one fide, but this renders it troubleforme to hold, or to follow; the remedy was very easy, and people, not bigotted to socials customs, have im-proved it greatly by making it fifait.

This is in a manner the general plough wied at this time, and it is varied more or lefs, but never much, according to the pleafure of the owner, or

ing to the pleasure of the owner, or fashion of the place.

The Effex plough, (for the best way to distinguish these instruments is according to the places where they are

used) has its earth-hoard, if the expression may be allowed, made of iron; by this means they make it counding; and this has a great edvantage in the turning of the turi; they generally make it light and fine, and the wheels proportioned. It is in this way very fit for light foils, and rids a great deal of business. We do not mean by calling this the Essex plough, that they use no other in that country; but that is the place where this kind is most used, and seems to have been invented.

ing this the Effex plough, that they use no other in that country; but that is the place where this kind is most used, and seems to have been invented.

The Lincolnshire plough owes its invention and form also to the general nature of the foil of that county. The sen land of that place is light, soft, and mellow, sree from stones, and naturally over grown with weeds and sedge on the surface, for this land they use a plough with a circular turning coulter, and a large sharp share; this is often a foot broad, and quite sharp at the edge. This plough has no wheels. There is a foot at the fore part of the beam, which they set higher or lower with a wedge, and by that means they keep the fore part of the plough from going deeper, than they chuse. And they have also wedges for setting the hinder part where the handle joins the beam. The coulter stands in its usual place before the share, and is a round iron wheel, with a sharp edge, that turns upon an anle as the plough moves, and cuts through the roots of the sedge and grass as it goes round, while the broad share cuts she bottom. This would not do on other land, but where the soil is of this sites and sine tend, and is thus covered with a tough and tangled matting of roots, it answers the purpose excellently.

The dray or dray plough was at one time, in a manner, universal, and there is no particular place where is can be said to be most in use at this time; for sit is retained in some, and rejected in others, according to the

The dray or drag plough was at one time, in a manner, universal, and there is no particular place where is can be faid to be most in use at this time; for it is retained in fome, and rejected is others, according to the sense and spirit of the farmerain adopting improvements. It is a very plain and simple kind; but notwithstanding the advantage the others have over it, on many occasions, this still excels them all for wet slays in the winter ploughings; for having the least workmanship of any, it is the least apt to clog, and having the sewest parts it is sixtest for such ground, where nothing

is required but going on, and turning up. It is limited to this use; for on other foils, and at other feafons, it is very much inferior to the other kinds. This plough has no wheels, and it confifts of a beam, handle, earth-beard, and fhare, and is set higher or lower, as they find occasion, by wedges at the fleath.

In some counties they have a plough with one wheel; it is a very ill-contrived, and very inconvenient instrument. This broad in the breech, and therefore it draws very heavily. It is a clumby and ill-contrived kind, that is growing out of ule; and of all the ploughs that have been invented, is the least water.

and ill-contrived kind, that is growing out of ule; and of all the ploughs that have been invented, is the least worth introducing any where.

The largest kind of plough used is England, or perhaps in any part of the world, is that which, in forme parts of the county of Cambridge, they use see of the common plough, and has no wheels: it is very bulky in all its parts, and has two coulters; one of these is fixed in the heam as usual, and the other in a piece of wood, fastened to the beam for that purpose; these both turn inwards, and cut such fide of the trench. The share is very broad and stat, and cuts the bottom of the trench. The earth-board is these times as long as in other ploughs, and casts the earth a great way off the trench. The instrument outs a trench a foot and a half wide at the top, a foot at the bottom, and a foot deep. It is excellent for this purpose on wet lands, saving a great deal of the expence or work in the common way of digging trenches by hand, but it requires a great number of horses to draw it. There is something in the contrivance of this plough, that may be useful farther than in the making of trenches, and it is for that reason proposed here to the farmer's consideration.

Of the uset of the common Plaugh, and their

Where there is a hard and firm foil; or where the land is full of flints, tharp thones, and gravel, no plough whatfor ever does fo well as the two-wheel'd kind, which may be fuited to the occation according to the directions already given, with refuel to firength; and where firong clays are to be wrought in fummer fallows, no other

plough

plough is equal to it. The point of the common plough will fly out every fless on these occasions, but this will answer very well when the earth is so baked and hardened by the fun, that no other will penetrate. The wheels of this plough should be about twenty inches in diameter, and it will always run best if the surrow wheel be made a little larger than the other.

Agreed advantage of this plough alfois, that it will work upon uneven ground without levelling, fo that none is equal to it for the ploughing up of passures, where there are mole-hills, and other irregularities. These disturb the other plough extremely, even the least of them, but this goes through all

Although the fingle wheel plough be fo clumfy and ill-contrived an implement, there is no reason why the use of a plough with one wheel should be rejected. A very light and stendermade plough may be furnished with one wheel instead of two, and it will answer excellently on light sandy soils. It will not be fit for harder work, but, running easily, it will serve this purpose better than any other.

The common two-wheel'd plough is to be drawn with horses or oxen, two a-breast. The heavy plough without wheels, which is neful for wet clays, and other very heavy and disagreeable work, is to be drawn by three, four, or five horses in length. The great use of this is where the ground lies level, and where there are no obstructions of roots, or the like, for these greatly disturb its operation. The two-wheel plough is preserable in such cases, not-withstanding all its inconveniences.

Whichever of these ploughs the husbandman chuses, let him take care, in the make of it, that it be suited to the soil upon which he is to use it. Let him fee that it be made larger if it be for deep or strong foils, and lighter and smaller if for the light and shallow ones. When the land is stiff and deep let the coulter be long and strong; in the deepest soils the coulter must go the deepest, because the weeds root deepest there.

Of whatever form, or whatever degree of firength, let him fee that the aron work be made true as well as found; for on the exactness of this

part of the inftrument, depends the going of it true to the pitch at which it is fet, and its keeping to the line wherein it is placed, without running out on one fide or the other.

As fo much depends upon the iron work, it is a very prudent method to have that made first, and wrought to a perfect truth, and then to have the wood work made to it: for in the common way of making the iron to the wood work, the Smith is often forced to work wrong in order to fuit it: in this case no art will make the plough go well. Let him take care that the iron work is wronght smooth, and rightly tempered; and that it be kept bright and clean in the using.

The shorter and less the plough, the easier it is worked; but though this be a recommendation in light foils, there is no using of such as have not a due weight and strength in tough and heavy work.

Of the improvements of the common Plough.

The regard that has been shewn to husbandry of late years has occasioned several improvements of the plough, for particular and allo for general purposes, and several new forms and kinde have been invented, some rather sanciful than advantageous, but others extremely useful. There is no part of husbandry in which more improvement may be made, nor in any in which it will be so immediately or certainly useful.

A double plough has been invented fome years ago, and is at this time in use in some places, by which a double quantity of land is ploughed at a time, one furrow by the side of another.— As this requires twice the number of horses, the expence is nearly equal to the advantage a but this is a hint capable of improvement, for although in tough and deep soils it loses its benefit, from the necessity of a double expence, yet certainly in some of those light and shallow lands we have in Buckinghamshire, and other places, a double plough might be so contrived, as to be drawn by two horses, and managed by one man; and then certainly the advantage would be double, and the expence the

of There has also been a contrivance of a plough that turned up two furrows at once one under another. But it is

fo unwieldy, and difficult of draught, that in its prefent form it will never get into reputation, nor does it deferve would be the advantage of ploughing deeper than ordinary, and that is enough to fpirit up forme who understand a thive one upon the fame plan with more judgment. Doubtles it is possible to obtain this advantage of deep ploughit in the plough that has hitherto been contrived for that use a second second

We have observed, that the digging with the spade is a much finer and more excellent tillage than that with the plough; and that the reason why our ardens are more fertile than fields of the fame foil and with the fame manure is, that the spade digs deeper, and breaks the particles of earth finer. Now a plough constructed upon this plan, with better judgment in the fabrick of it; would have both those advantages: it would dig full as deep as the fpade, and might be made to break the earth as much. It is furely worth the while of those who have a knowledge in the proper arts, to devote fome of their fludies to this improvement of the plough, which is doubtlefs the most uleful engine in the world; and at prefent very deficient, even in its most improved state. The adding breadth to the fin of the dray or foot plough, will at all times make it more and more ferviceable in damp and ftiff clayey lands; and in ploughing thefe, the horses should always go at length, that they may tread less of the ground; on the other hand, in light foils, the cattle, whether horses or oxen, should always goa-breaft, for the double treading is ferviceable to fuch land, in the fame manner with the treading of sheep when they are folded upon it. In flony ground that has grafs of some standing upon it, the plough flould have a round pointed share, with a fin to cut the roots of the grafs, for the broad fin is apt to jump out of the ground.

In ground that has been wood, and has roots remaining; or in other places where there are a great many larger roots in the way, it is a very good me-thod they use in some parts of Stafford-shire, of having an instrument of Iron, with a fharp edge, fet through the beam

Vote II.

of the plough, behind the coulter, and through the plough-head. This, at the fame time that it arms the plough for cutting these roots asunder, if right-ly fixed, strengthens the whole frame of it, and makes it able to bear the rough work there often is in thefe places, and which elfe would tear it to pieces : in other places thereabout, they use a couple of tharp wings of iron made fait to the plough-share, which answers the same purpose, but does not so strengthen the plough.

But these are all of them improvements, which rather shew what may be done, than execute it well in the felves; they may be confidered as hints to what is proper, rather than as compleat things: there remains one to be spoken of in which the improvement is very great, and is carried to a due degree of perfection; fo that the far-mer has no more to do than to order it to be made according to the description.

This is the four-coultered plough, fo highly and fo justly extolled by the author of the Horsehoeing Husban-

Of the Wheel Plough.

The foundation of this inflryment is the common two-wheel'd plough, in its most improved condition, from which it differs in the having three additional coulters; fo that instead of one there are four. We shall here consider this wheel plough in its most improved state; and hereaster describe the four-coultered plough form'd upon it.

This plough confifts of two parts, diffinguished by the names of the plough-head, and plough-tail. head has two wheels of about eighteen inches diameter, the spindle or axis of these is of iron, and passes through a box which stands crosswite of the beam. This fpindle turns round both box and in the wheels. From this box rife two perpendicular flayes, called crow flaves; these are fastened into the box, and have each two rows of holes, by means of which the beam of the plough is raised or sunk at pleasure, in order to increase or diminish the depth of the furrow. This is done by pinning higher or lower a cross piece, which is called the pillow, because the plough beam rests upon it. At the top of the two crow staves is another crois piece, called the gallows. The

crow staves pass through this by mor-tifes, and are pinned into it. From the box of the plough within the staves, there is carried a small frame composed of two legs, and a crofs top, to which the links of iron are fixed, by which the plough is drawn; this frame is called the wilds of the plough. In the middle of the box there also is a hole into which is let one end of an iron chain, the other end whereof is faften'd to the middle of the beam, this is called the tow chain, and faftens the head the tow chain, and fastens the head and tail of the plough together: at the end where it reaches the beam, this has a collar that goes round it, and is fastened by a stake within side the box. This stake is held up to the left crow-staff by a wyth, which passes round it above, and under the end of the gallows below: a piece of cord is sometimes used instead of a wyth: any thing that may be sied will do. From the top of this stake roes an iron chain. the top of this 'ake goes an iron chain, called the bridle chain; this is falten'd at one end to the top of the stake, and at the other to the middle of the beam of the plough, by a pin in the same place place where the collar of the tow chain paffes round it.

This is the structure of the head of the plough, and these are its several

The tail confifts of the beam, which is a flout and long pole, through which, a little below the pin that holds the bridle chain, and the collar of the tow chain, there paffes the coulter, a long and flender iron inftrument, which running downward and a little forward, ends near the point of the share. This coulter is fixed in its hole of the beam by a wedge, so that it can be raised or sunk at pleasure; behind are two handles, the one longer and the other shorter; the shorter of which meets the head of the fore sheat, where it enters the beam, and is fixed by a pin, and fallened to the top of the hinder sheat by another pin. These sheats are two boards, the hinder one near the extremity of the beam; the other forwarder and more flanting, and are both fastened to the share, which runs stat below. On the other side of the plough tail descends another stat board, called the drock; to this the ground-weift is fastened, which is a board running nearly parallel with a

thare. The longer of the two handles is also fastened to the drock, and the earth-board rifes at its bottom. The fore-sheat is supported by a double retch, which passes through the beam,

and is faltened by forews and nuts.

This is, the four-wheel plough as used at present in the places where agriculture is most understood, and best practifed: we see it confish of more parts than the two wheeled plough of Hertfordshire, according to the first invention, but there is not one of these added parts but is an advantage in either

strength or convenience.

Of the four-coultered Plough. plough, is usually eight foot long; the proper length of the beam of the coulter'd plough, in ten feet four inches.
The beam of the common kind is strait all the way, but that of the four-coultered plough rifes with a bend when it comes toward the wheels, to where it refts upon the pillow. The beam, fuppoing the plough to ftand upon a level furface, would be at the end of the plough-tail only eleven inches and a half from the ground: at the place where the bend begins, which is a little before the first coulter, it will be one foot eight inches and a half; and where the beam bears upon the pillow, two feet ten inches. This is the proper make of the beam of the four-coulter'd

plough.

The four coulters are thus disposed, measuring from the tail or extream end of the beam behind. From this extremity to the back of the first coulter, is three feet two inches; this coulter has its point near the share: from the back of the first, to the back of the next coulter, is thirteen inches; from thence to the third thirteen inches, and from thence to the fourth the fame. So that from the end of the beam behind, to the place where it begins to bend upwards, which is a little before the fourth coulter, counting from the tail, is feven feet. The length of the additional coulters, particularly of the fourth, or that next the head of the plough, would be a great inconvenience in this machine, but that is prevented by the bending of the beam toward the head. If the beam were ftraight as in other ploughs, these coulters must be very long to reach the ground, and the

would require to be very firong, not to hend, and this would make them expenfive and cumberforme; and at the fame time their length, if ever fo well formed, would make them apt to loofen the wedges wherewith they are fixed in the holes. This would make the coulter rife up out of its work, but by this contrivance of a crooked beam, a moderate length in the coulters ferve : they do not require any great thickness or quantity of iron, and they always

work with regularity.

As to the materials, the beam may be made of afh or oak, according to the nature of the ground whereon it is to be employed; for aft has the advan-tage of being light, but the oak is vaftly ftronger; fo that when the work will be very hard, the oak, in spite of its weight, is preferable. As to its breadth and thickness, they may also vary according to the foil that is to be tilled; but for moderate ground, the beam at the first coulter hole should be five inches deep and four broad.

Giving this as a middling proportion, the fize of the other parts may be as follows. The fore theat, commonly called fimply the fleat, flould be feven inches broad; the retch upon it must be of iron, and its left leg must stand foremost, that the edge of its forepart, which is flat, may fit close to the wood of the fheat. The use of this retch is to hold the sheat up to the beam, which it does by means of nuts and screws. Through the top part of the sheat there is also to be a hole, which is to be a small part within the beam, fo that a pin being driven into the hole, draws up the sheat very close to the beam. The elevation of this sheat is a very great article in the management of every wheel plough. If this make an angle of more than five and forty degrees with the plain furface whereon the plough stands, that instrument will never go well. In the four-coulter

plough it ought to make an angle of forty-two or forty-three degrees only.

This fort of expression will be very well understood by those who are used to mechanics; but for the lake of the common farmer, we shall fay all that is meant by it is, that the sheat is to be a little less raised in this than it is in a well-going common wheel plough. The length of the there from the

point to the tail, should be three feet nine inches. The fin of the share rifing flanting from the point upwards.
The point of the share should be three inches and a half long, flat underneath, and round at the top, and this should be of hard steel underneath. The edges of the fin also should be well steeled, and its length proportioned to

the nature of the ground.

Behind the fin is placed the focket, into which the bottom of the sheat, be-fore described, enters; and from the tail of the share is to rise a small plate of Iron, this is to be well rivetted to the share: by this the tail of the share is fastened to the hinder sheat. This fastening is done by an iron pin, with a screw at the end, to which a nut is to be screwed on the inner side of the

fheat.
The focket is to be a mortife of about a foot long, at the upper part two inches deep, and the fore end must not be perpendicular, but made stanting, conformable to the fore part of the fleat that enters into it. The upper edge of the fore part of the mortise must bear against the sheat; and if it be not quite fo flanting as the fleat, a little of the wood is to be pared off at the

edge to make it fit.

The upper fide of the there fhould be perfectly firsit, but its neck on the under fide should fland a little hollow from the ground. This hollowness should be about half an inch in a common plough, but in the four-coultered plough it should not be above a quarter plough it should not be above a quarter of an inch. So that the share, when it is first made standing upon its bottom, bears upon the level surface only in three places; these are the point, the tail, and the corner of the sin. The hollowness of the sin must be greater in a stony soil than in others.

The placing of the share rightly upon the sheat is the most important, and the most difficult next of the Planch.

the most difficult part of the Plough-right's trade: on this depends the well going of the plough, and for this rea-ton; as it is more important in the four coultered plough than in any other, we advife the farmer when he has made himfelf a mafter by thefe descriptions of the form and structure of this plough, to take care that he employ a skilful and an honest workman; and if he do not find the plough go well when

the fault, for in that part is generally the feat of it.

The groundwrift is to be of iron, its length must be two feet five inches, its breadth at the longest end four inches, and is to go somewhat smaller all the way. Its thickness in general is to be three-eighths of an inch; but at the fmaller end it is to be much thinner, that it may be capable of bending fo, that it can be brought close to the

At the fmaller end of the groundwrist are to be four holes, through one of which there goes a nail that fastens the groundwrist to the sheat. This paffes through a long hole which is made in the fide of the focket of the share. The space between the outside of the groundwrist, to the outside of the share, is eleven inches and a half, and this is the width of the lower part of the plough-tail at the ground: at the upper fide of the broad end of the ground-wrift there are also several holes by which it is nailed to the lower part of the drock; this is long, narrow, and has three holes for the reception of its fastenings.

The earth board has a rifing near its end, which takes hold of the end of the sheat to fasten it the more firmly; and near that are two holes by which it is fixed to the sheat; at the other end also there is a hole, by which it is fastened to the drock.

The pin which fastens theearth board to the drock, is to be thicker in the middle than at the end, and this prevents the earth board from coming near the drock. By means of this pin the earth board is also set at a greater or fmaller distance from the drock, as there is occasion fometimes to throw off the furrow farther from the plough than at others. It always stands a good deal farther out on the right hand than the groundwrift, and this is one reason why the drock is made crooked, bending outwards in that part.

The long handle of the plough is to be five feet four inches in length, and four inches broad in the wideft part. It is to have holes in its lower part for pinning it to the sheat, and another near its upper end, by which it is faf-tened to the drock.

The length of the short handle is three

made, to look there for the occasion of feet nine inches, and it is to have two holes, both toward its lower end : by the upper hole it is pinned to the hinder fheat, and by the lower to the top of the fore sheat above the beam of the plough.

We come now to describe the placing of the four coulters in the beam of this plough, contrived for their reception; this is the most important article of all: and the greatest point to be ob-tained is, that the sour imaginary planes, described by the edges of the four coulters, as the plough moves forward, be all parallel, or nearly fo, for if this be not regarded, they will not enter the ground together.

To make fure of this important point, the holes for the coulters must be made in the beam of the plough in the fol-lowing manner. The first coulter is to be placed as already directed, the fecond coulter hole is to be made two inches and a half more on the right hand than the first: the third two inches and a half more on the right hand than the fecond; and the fourth two inches and a half more on the right hand than the third. This will place the four coulters conformable to the four cuts they are to make in a ten-inch furrow.

Now no beam of a plough is broad enough to hold these holes in this direction, and for that reason a piece of wood is added to the beam of the sour coultered plough to give space for it. This piece is to be very well fastened to the beam, and the second hole is to be made, as will be seen, according to the distance, partly in the piece, and partly in the beam; and the others will be all made entirely in the piece. will be all made entirely in the piece. The piece is best fastened by three good forews with their nuts, and its place is on the right side of the beam. The distance of each hole to the right of the last, must be measured from the middle of one hole to the middle of the other.

The fore part of every hole must incline a little to the lest, so that the backs of the coulters may not bear against the lest side of the incisions made by the edges. Each hole is to be a mortile of an inch and quarter wide, with its two opposite sides pa-rallel from top to bottom. The length at the top is three inches and a half,

and at the bottom three inches; and the back of each is not perpendicular, but flanting, and makes the coulter ftand flanting. It is fixed in this mor-tife by a pole wedge in the fame man-ner as the coulter is in other ploughs. The poulter is a kind of iron knife,

confifting of two paits; a handle, and blade; the latter having an edge.

The length of the coulter is to be two feet eight inches, but it will shorten in wearing; the blade is to be fixteen inches. inches long, with its edge running all the way along it; the handle is to be of the fame length. This is so long that it will at first very well stand up above the beam, but it must be driven down lower and lower, as the point shortens by wearing. The handle is to be an inch and seven-eighths broad, and feven-eighths of an inch thick

throughout,

The first coulter in all ploughs should be so placed, that its back should bear against the back of the hole; its right side above to bear against the upper edge of the hole, and its left side to bear against the lower edge : and for this reason there always are required at least three wedges to hold a coulter in its place. The pole wedge stands before it, the other two, one on the left fide above, and the other on the right fide underneath: and the hole must be fo made, that the coulter standing thus acrofs it, its point may incline two inches and a half or more toward the left than the point of the share, if it were driven down as low as it; but it should never be so low in any plough whatfoever, As to its bearing for-wards, the point of the couler fhould never be before the middle of the point of the share. It must be set obliquely with respect to the share, and it must never be fet much more flanting; for if it should, it would have greater force to raife up the pole wedge, and would be continually getting loofe,

In the four coultered plough, the fame posture with this in respect of the inclination of their points to the lest: this is a great advantage to them; for by that means when the fin is raifed up by turning the handles toward the left, their points do not rife out of the ground on the right hand as they otherwife would. With respect to their

pointing forwards, experience shews, that every one of the three should be set a little more perpendicular than the next behind it; so that the fourth coulter will fland nearest to perpendicular of any of them. None of these coulters ought to de-

None of these coulters ought to de-feend so low as the bottom of the share, unless when the ploughing is very shal-low. It is always sufficient that they cut through the turf, however deep the plough go into the ground.

When the ploughing is to be very shallow, the fin of the share should be broad enough to cut off the fourth piece of the surrow.

The nut which ferves for faftening the piece to the beam of the plough, thould have two opposite corners turn'd up, by which it may be driven round with a hammer. This has so great a force, that three of these will hold the beam and the piece as firmly together, as if they were one bit of wood. In dry weather the wood will thrink, and then the nuts are to be driven farther on. The fame caution must be ob-ferved in other parts of the plough.— Between the nut and the wood there should be a thin piece of iron by way of bolfter: this prevents the nut from wearing into the wood; it must be fomething larger than the nut, and of the thickness of a shilling. Some use a piece of leather, but when the nut is to be often screwed, iron is much bet-

There must also be iron plates upon all the coulter holes, both above and below. These must be nailed on with

nails made for that purpose.

Instead of a collar moving round the beam, 'tis much better to have a fquare one with 'an open end, which shall fasten to it by a couple of crooks.— These must turn upwards, that they may not lay hold of any thing that shall be turned up under the plough; the be turned up under the plough; the front or close-end of this collar is to be a firong iron bar, with feveral notches. Two pins are to be driven into the beam of the plough, just behind the fecond coulter hole, one on each fide : and there is to be another crook called a (C) from its shape, which is to go over the close end of the collar, Each end of this is a hook, and one of these lays hold of the cross bar of the collar, going into one of its notches;

and to the other is fixed a link, which holds the tow chain to the collar.

The trie of these notches, and this fix'd position of the collar is this; that as the share wears at the point, it always inclines a little to the right; and this is remedied by removing the crook into another notch of the cross bar of the collar, so that the point of the share is thus always kept in a proper direction. The length of each side har of the collar should be a soot.

bar of the collar should be a foot.

We have shewn that the tow chain of the plough is fastened within the box by a staff passed through its sirst link, as the hook of the collar holds its last. This stake is commonly nailed, to prevent its slying out of its place. And when the plough is to be drawn a little nearer the crow staves, the method is to take in another link of this chain, passing through the stake, and fastening it as before: or it may be done better by taking hold of the crook of the collar, with a second or third link of the chain. This shortening of the chain always draws the point of the share a little to the left.

For drawing of the plough there is fastened to the box an iron machine, ealled the wilds; this is very like the square collar, only its legs are longer. The cross bar at the top is notched as that of the square collar, but only one leg of the wilds is fixed to this square bar in the making; the other leg is loose, and has a loop through which the other end of the cross bar is put, so that it is fixed on at pleasure. Both these legs of the wilds pass through the box of the plough, and are sastened in behind it by a couple of hooked pins made for that purpose. The holes cut through the box for letting these legs pass, are to be made slanting upwards, so that the fore part of the wilds may be higher than the hinder; otherwise the upper end of the crow staves will lean quite back when the plough is drawn. The use of the notches in the bar of the wilds, is to give the plough a broader or a narrower surrow. A double crook with a link is fixed to this bar, and by this the horse draw. If the cattle are tall, the traces must be long, else they will be apt to raise the wheels off the ground, and overturn the plough.

The legs of the wilds should be eight

inches and a half afunder, and their length nineteen inches: the links are to be fix inches and a half long. They are to be put into two notches diffant from one another, or elfe one wheel of the plough will advance before the other. When they are moved to the notches on the right hand, it brings the wheels toward the left hand, which gives the greater furrow; and, on the contrary, when they are moved on the notches on the left hand, it gives the plough a lefs furrow, by bringing the wheels towards the right.

wheels towards the right.

The height of the wheels we have mentioned already, as also the proper method of making one of them higher than the other: their distance should be two seet five inches and a half, as set from one another on the ground. The crow staves should be one foot eleven inches high from the bex of the plough to the gallows that goes across them: these are to stand upright upon the box, and they should be ten inches and a half asunder.

The pillow which croffes the staves below the gallows, is to be pinned up at its end by two small iron pins, and it is convenient to keep these chained to it, that if they chance to drop, they may not be lost.

The height from the ground to the hole in the box where the tow chain passes through, is to be thirteen unches. This brings it to two inches below the holes of the wilds, on the hinder side of the box.

The height of the plough at the place where the other end of the tow chain is fastened to the beam, should be twenty inches from the level ground; and about the middle of the tow chain there should be a swivel, that one end of the chain may turn without the other.

This is the construction of the four coultered plough; and as it is founded upon the two wheeled plough improved to the greatest perfection, the parts of that plough can never be so well understood as in the description here given for their perfect and exast construction. It is very necessary that he who would understake to make, or to give orders for the making of a four coultered plough, should first thoroughly understand the construction, parts, and composition of a perfect one with a single coulter; and we have by this

means

means avoided the repetition of a long and dry detail of the parts. We have before flewn what was the

means avoided the repetition of a long and dry detail of the pares.

We have before fhewn what was the first construction of the wheel plough, which was a vast Improvement upon the instruments in husbandry of that time; and we have here explained its farther advances toward that perfection, which it may be justly said to have attained in the four coultered kind.

When the four coultered kind.

When the four coultered kind.

When the four coultered kind, let it be tried with the single coulter before the others are put on. There may be a fault in the work that cannot be discovered, even by a judicious eye, till it is tried; and this may prevent its going as it ought. That plough which will not go well with one coulter, certainly would not with sour; but it would be very unjust to charge upon the number of the coulters, what is really the fault of some part of the structure of the instrument itself, independent of that addition.

If the plough goes well with one coulter, then put in the other three; there is not much fear but it will also go well with them. If it do not, then let the position of the three additional coulters be examined; and let it be seen in what that differs from the rule, laid down here for that purpose. That it differs in something need not be doubted; for of a certainty, if they be rightly disposed according to these directions, the plough will go well.

To know whether a plough goes well, examine the surrow: if that be of an equal depth on the right hand and on the lest; and if the plough zurns it off fairly, it is right. If in the going of the plough, the tail of the share, and the bottom of the surrow; and if it goes easy in the band of the holder, without pressing one arm more than the bottom of the surrow; and if it goes easy in the band of the holder, without pressing one arm more than the other, the surrow on the surrow and if it goes easy in the band of the holder, without pressing one arm more than the other, the surrow on the surrow and in the plough.

without preffing one arm more than the other, the farmer may be affured it is a good one. Such a plough will go with four coulters as well as one. Of the management of a Plaugh in working. When the farmer has got his plough well made, let him fee that he keep it in order; and that he employ a man in the working, who is able to manage it as he ought, and who has honefly enough to take the necessary care and pains. The farmer depends more upon pains. The farmer depends more upon the integrity and knowledge of his

ploughman, than on the qualities of any other fervant whatfoever. The handles of the plough being made of that length we have ordered, made of that length we have ordered, are very useful for the proper guiding of that instrument; but often the ploughman will cut them shorter to savour his idleness. When they are shortened, he can bear his whole weight upon them, and in a manner ride instead of walking. If he should play this idle trick with long handles, his weight would tilt up the fore end of the heam, and raise the share out of

this idle trick with long handles, his weight would tilt up the fore end of the heam, and raife the stage out of the ground. The keeping the arms long therefore prevents this negligeas trick, and at the same time gives him an opportunity of managing the plough to the greatest advantage.

An awkward ploughman will be continually oversetting the two wheel'd plough; hut a careful person, who is used to the management of it, hardly ever meets with such an accident.

The great danger of over turning is, at the going out at the land's cod from one furrow to another. But the stillful ploughman lifts his plough a lattle round, and then holds up the crow-staves with the end of the heam, by prefing his hand hard against the handle, while the plough see down on one side, till the horses, the wheels, and the body of the plough come nearly to a line in the beginning of the susows and then he lists up the plough and goes on.

These little contrivances are exceed-ingly useful. They are more easily seen in the practice, than taught by words; but what is here faid may serve to lesthe farmer know when his ploughess manages his hudiness rights and whe he does not ; and may affid him in the giving one that is willing directions.

in the four coultered plough there is another inconvenience, very likely to happen, but very easily remedied; this is, that sometimes the first or less formation of the first coulter and the shear, and in this case it falls upon the less hand side of the plough.

This, though not of the confequence of many other faults, yet is is worth preventing, and the more as the rem dy is easy. To this purpose let the cond coulter frand, a little higher the

the third; and then the second furrow holding the first at its bottom, will carry it over together with itself, and throw it on the right side of the earth-

Let us give the farmer one caution farther in this matter; which is, that in this plating the coulter, he never fels it to high that it does not cut the turf through. As to the first coulter, though it should cut but an inch or two within the ground, the share will break off the feet succession. break off the first furrow in raising

it up.

If in the ploughing with this four coultered kind, the coulters become clogged and loaded with pieces of the first the first with turf, a boy flould go by the fide with a forked flick to clean them off from time to time, which is done very ea-

fly, "The coulters being disposed exactly as we have described, will have more space between them above than below, so that this clogging will not happen often, and when it does, the cleaning is easily performed. The farmer may always know when he shall have occasion for a boy to follow for this purpose, because it rises not from the fault pose, because it rises not from the fault of the plough, but the nature of the ground. This plough in clear ground goes as free and clean as any; but when there is a great quantity of couch grass on the land, its roots hold the turf together in such a manner, that it rises in pieces, and hangs between. This is the only occasion on which there is a need of such affishance; but if it be not taken care of, the load of cleaning matter will fill the spaces heclogging matter will fill the spaces be-tween the coulters, and raise up the plough out of its work.

In the common two wheel plough

there is a very great inconvenience too frequent, and of very bad confequence, this is, the leaving a great part of the land unturned from the share's point land unturned from the share's point going too much to the left. The con-fequence of this is, that the work is done irregularly, and often a great part of the ground which is covered by the broken earth, is whole and untouched, and the weeds are found afterwards growing upon it. This is a great fault: it defrauds the farmer of formuch of the business he engaged should be done; and there is nothing he ought to look into so carefully.

Sometimes he will find it happen from the imperfection of the plough itself, and then he is to apply to the maker. The well going of a plough principally depends in the placing of the share rightly upon the sheat; and in this cafe the remedy must be by an amendment in that article. This is the nices and most difficult part of the amendment in that article. This is the nicest and most difficult part of the ploughright's business, and is what the farmer is most concerned of all other to see done well; it matters not that the maker can tell him, or shew him it is right as it stands upon the ground, let him try it in some work, and never, be fatisfied with it till it answers his expectation,

This fault last named, though it fometimes be owing to the make of the plough, get may also arile only from the folly of the ploughman's letting is wrong: therefore this should be tried first. His fault is the letting it so than the point of the there turns too much to the left: in this cale it will always cut crofly, and leave a part of the ground untouched, though covered by that which has been cut, and is thrown over it.

There is no part of his business which the farmer is more under a necessity of following with his own eye than this. His interest is engaged in the well executing of it, though the fervants' are not. It is easy to plough too shallow, or too deep. Where there is a sull foll, the deeper the plough cuts the better; but where the soil is shallow, and the bottom bad, let there be great care taken that the clay, or whatever other bad matter it may be, shall not be turned up with the foil. He should himself oversee this that his ploughing may give him all the advantage, and avoid all the disadvantage there is in the condition and nature of there is in the condition and nature of the ground.

Some choice is to be made in regard to the fituation, in the manner, and course of the work. When a land lies upon the descent of a hill, let it never be ploughed firsit up and down, but crosswife. This has a double advantage: for the horses are not tired, as they would be with going strait up and down, and the land also will fare a great deal the better.

Of laying Land in ridges.

A great article in the rendering of

fertile, is the breaking and dividing it into small particles, whether this be done mechanically by the plough, or by fermentation given to it by manures; that this breaking of the foll into small particles is effential to the free growth of plants is very plain, because it is from the smallest particles of this matter that they are nourished, and the breaking of the land in this manner is the only method of giving the roots a free passage between them, in their fearch of this siourishment.

On this depends the famous fystem of Horse-hoeing Husbandry. But be-fide these two articles, of liberty of spreading the roets, and a proper quantity of mourishment, there are two other, without which plants cannot thrive, these are, a due degree of liest and mouthure, and mouthure.

Corn, and the other common produce of our ploughed land, demand a moderate degree of each of thefe, and the farmer is to guide his practice throughout in such manner, as to give them a supply without giving them abundance. It will be asked, can the farmer cause fundaine, or can be east down rain h. Neither: nor do we expect impossibilities of him; nothing is more easy than what we require him to do; and the effect shews that it will succeed.

But as he is to communicate to his crop all good, fo far as he is able, fo he is to defend it from all ill; and as we have flewn how he may give the advantage, it remains that we flew how he may prevent the hurt.

New one of the greatest missprtunes

Now one of the greatest missortunes that can attend a crop is too much wet. This sometimes happens from the particularity of a season; but oftner from the nature of the land. When the first is the case, the sarmer's care must be to find methods of carrying the wet off; when the latter, he must employ all his care to provide against it. Land that is too was will never produce corn well, and to prevent the mischief attending this condition of the ground, has been invented the practice of which we now treat, the laying land in ridges.

This is a particular forc of tillage, and its effect is greater than those from to understand who employ it. They use it only to keep their lands from Vol. II.

being too wet; but it has an effect in regard to the degree of heat, not less than with respect to that of mosture; We shall see, upon examining this

We fliall fee, upon examining this practice and its effects, thow well nature has taught people to ufeit. We fee them in the moderate folls that are frequent in Buckinghamfulre, and elfewhere, frequently lay four eldges regether: in Kent they often lay fix, and the lower pares of Effect eight, and in Huntingdonfhire, upon their wet and fliff clays, they fow all upon broad lands, raising the middle of the ridge in forme places two foots and a half higher than the fide turnws. This are once exposes those tough and claiming folls to the fun better than any other method, and drains them of the abundant wet.

The chief delign of laying land in ridges is draining of it, and making the corn grow properly dry this we fee that by a proper management it may be made to extend its benefits farther. In this cafe, of a clayer foil laid in ridges open to the east and week, where the fituation is such as to allow it without other damage, the sun addition a double way upon the foil, not only giving it warmin, when the abundant cold mosture is taken away, but by a gentle calcination of the surface, it reduces that superficial part to a state of greater perfection, and to a kind of manure for the rest.

The natural defects of many lands, otherwise useful and good, are altoo great degree of moisture, and a defect of heat. The latter naturally arises from the former; for a quantity of water detained among clay, or any other tough earth, becomes cold, and chills the plants that are laid upon it. The great remedy, in this case, is the laying the land in ridges; and that the careful husbandman may be three to know when this is required, as well as how to do it, we shall give him the following hints:

the two principal kinds of land, that are liable to be chilled by wet, are those on hills, where there is a bed of clay under the mould; and those in level grounds, which conflict of a very deep and very thir foil.

The occasion of the middles in these is very obvious, the rains fall upon this ground, and, solking through the mould

fore they (pread themfelves among the mould above; and the mould below Ropping it in its defect, and more water falling above, the whole ap-proaches to the nature of a bog; the ground being fost, pappy, and raised

above the natural level by the water forced among it.

When this is the case in a very great degree, no method of ploughing can be fufficiently effectual to remedy it. In this case, trenches must be cut across with a descent, to carry the water off. And they may be filled up with rough stones, and covered over with earth again, to that all may be wrought as a level furface: Reason points out this remedy, but it is often too expensive; and such lands, when too wet and too difficult of remedy, are to be neglected; we therefore have named these only to shew, that they are not to be attempted by ridging; for nothing disheartens a husbandman so much, as undertaking what he afterwards finds cannot be

When the wet is in a confiderably large degree, it may be discharged by laying the land properly in ridges, tho' not where it is thus very abundant; therefore let the farmer first examine carefully, whether the state of the und will or will not admit a cure;

if he thinks it will, this is the manner in which he is to fer about it:

Let him plough the land in ridges, almost cross-wife of the hill, but a little flanting; for if they be perfectly carried across, or quite first down, they will either way do. When they are thus carried cross-wife, but a little diagonally, their parting furrows lying open, will each ferve as a drain to the ridge next below it: for when the plough has made the bottom of these nearly horizontal furrows a few inches deeper than the furface of the clay, the water will naturally and fecurely run to their ends, without rifing into the mould, provided no part of the furrows be lower than their ends.

These parting surrows and their ridges should always be made a little obliquely; and this obliquity, or santing, should be more or less, according to the form and declinity of the hill

to the form and declivity of the hill.

We are to confider that there are (wo

ways, in which water that falls upon an hill runs off. The one is on the furface, and the other is between the mould that makes the foil, and the clay that makes the bed under it.—
'Tis this fecond courfe, or the running of the water upon the bed of clay, and nder the mould, that we are to confider on these occasions; for on that depends the damagel we propose to rectify. This is the source of what we have directed, as to the disposition of the ridges; and It will be found, on the most careful examination, that as only this method of ridging could keep that part of the foil dry, fo there is no direction in which they could run, that will so well fecure the advantage, as the carrying them with this slant crosswife of the hill.

In this case the consideration of laving the ridges east and west, must give way to this crofs direction, with respect to the descent of the hill. We have mentioned, under that head, that there were exceptions; this is the principal; and in this, as in all other cases, the greater convenience is to be consulted, and the leffer is to give place to it...
The farmer who shall make himself

perfect mafter of his bufiness, will often find two things would be right, both of which together are impracti-cable: he must, in this case, content himself with taking the best.

The way of working on this occasion is to plough the ridges in paces, with-out throwing any earth into the trench-es. In this case, the ridges will be plain at the top; and the rain water will speedily run downward to the next trench, and thence to the head land, and so out of the field.

These are easy and plain directions,

and the fuccess of them is certain; it not only is plain to reason, but is vouched by experience; and yet a great deal of land that might be saved by it, is left to produce little or nothing by

the common treatment.

Wet land, that lies level, is the fecond kind of land that is liable to be et and cold, and that may be greatly mended by the tillage in ridges. Sometimes there are springs on the hills, that add to the quantity of water which they have from rains, and this makes the cure more difficult : in thefe deep, wet, and ftiff foils that lie on a

level, the cause is always to be found therefore it is so much ground gained in the water that falls by rain alone, to the husbandman.

But this will sometimes put the land. It is certain, the surface of a field into as bad a condition as if there measures more in quantity when in the surface in many places.

flatness keeps it from drying, till the feafon of ploughing and fowing too are loft.

The farmers are backward in ploughing the hilly wet grounds in ridges, and farmer the tilling his fiff, cold, moiff, more in this. They say it prevents and flat lands, in this method of plougher the benefit of cross ploughing, which ing in ridges.

They fay it prevents and farmer the tilling his fiff, cold, moiff, more in this. They say it prevents and flat lands, in this method of plougher the benefit of cross ploughing, which ing in ridges.

PLUM-TREE, (Prunus.) The ward ricties of the fruit are, and strength of the up with harrows. Plum, with a white bloom, yellow But these are mistakes and prejudices, or land the plum with a white bloom; ripe the middle or end of July.

Moreco, or early black if fruit, without being at the pains of examinating whether they be true or false, deing whether they be true or falle, de-pend the greatest part of his disappoints ments and losses. Cross ploughing is nents and loffes. Crofs plong fometimes a hurt as well as a benefit to land: this is certain, and any one. who is accustomed to farming, and will examine what he from time to time fees, inftead of taking all things upon truft, will find it to in experience.
This, therefore, is an objection ariting only from prejudice in favour of common practice, and common opinion: the other is entirely an error; for, inflead of losing any ground by ridges, it is possible to gain some. In the most simple and common practice, none is lost; and managing wifely and properly, much may be gained.

Ground is gained for the farmer's purpose, when its surface is increased, and is capable of beauty.

purpose, when its surface is increased, and is capable of hearing more corn; and this is plainly practicable in the ploughing in ridges. If in this custom of ploughing, we allow two feet in fixteen for an empty surrow, still the difference of surface between the rest as it lay stat, and as it is ploughed into ridges, is much greater in his favour, than this proportion is in loss of quantity. All the surface thus raised in ridges, is capable of bearing corn, and ridges, is capable of bearing corn, and

were springs in many places.

When a deep stiff soil lies stat, and ly certain, that all its surface, the empty is ploughed sometimes one way, and surrows excepted, is capable of hearing sometimes another by cross ploughing, corn. This is a short state of the case, it will hold water a long time. By These empty surrows have been taken it that missortune the plough is kept out into the computation, and the difference or three weeks longer than if it rence is in favour of the land in ridges, were in round ridges. Sometimes its No sophistry can get the better of some state of the plain a safet and it is upon this safet. These empty furrows have been taken into the computation, and the difference is in favour of the land in ridges. No sophistry can get the better of sophin a sact and it is upon this sact, and the evident advantage that were and cold lands receive from this kind of tillage, that we recommend to the farmer the tilling his stiff, cold, moift, and sax lands, in this method of ploughting in ridges.

powdered with blue, is well flavoured, and discharges the stone; ripe end of July.

John Little Damask Plum.—A small, rounds black, well davoured plum; ripe beginning of August.

Great Damask Violet Plum.—A moderately large, roundish-oval, dark-blue Plum, covered with a violet bloom, isof a rich juicy flavour, and quits the stone; ripe in August.

Queen Claudia Plum, foretimes called Great Gamash.

flone; ripe in August.

Queen Claudia Plum, fometimes called Green-Gage.—A middle-fixed, round, yellowish-green Plum, having a firm deep-green pulp, of a fine rich flavoue, and quits the stone; sipe in September.

Little Queen Claudia Plum,—A small, round, whitish-yellow Plum, powdered with white, and parts from the stone; ripe end of August and beginning of September.

Green-Gage Plum.—A middle-fixed, roundish, green Plum, sometimes purphish on the sunny side, having a yeld lowish-green firm pulp, of a most declicious sich flavour, but does not discharge the stone freely is one of our most valuable plums, and the tree a great bearer; rips the end of August and beginning of September.

Varities.] There are several varieties of greenish Plums, that go by the name

of greenish Plums, that go by the name E e 2

of Green-Gages, that are of inferior

roundiff, blueish Plum, of a rich standard, but is excellent for preserving your; tipe beginning or middle of and culinary purposes; tipe beginning september.

Orland Plum.—A middle-fized, Fetberingson Plum.—A large, oblong, round, pale-red Plum, often of a whist fine-red plum, baving a fine rich pulp, tish-green colour on the side away from that quits the stone; ripe end of Australian is of but a middling flavour, gust and beginning of September.

and quits the stone clean. The tree is Beginning of September.

Beginning growth, a remarkably lowish plum, tinged with red next the great beater, and years profitable for sun, sharing a strength red next the great beater, and years profitable for sun, sharing a strength red next the

of spreading growth, a remarkably lowish plum, tinged with red next the great beater, and very profitable for sun, having a firm, dry, rich pulp, is common use, and for those who sup- in much estimation for sweetmeats; ply the markets; ripe end of August ripe in September.

And beginning of September.

Le Royal Plum.—A large, roundist, Drop d'Or, or Club of Gald Plum.—A light red, finally powdered plum, have middle fixed, roundist, bright yellow ing a juicy sugary pulp, that cleaves Plum, spotted with red, of an excellator the stone; ripe and of August and lent vinous flavous, and adhere to the inseptember.

September.

Black Padigron Plum.—A middle violet bloom; ripe towards the middle of the control of the ripe towards the middle violet bloom; ripe towards the middle of the control of the ripe towards the middle of the control of the ripe towards the middle of the control of the ripe towards the middle of the control of the ripe towards the middle of the ripe towards the ripe toward

Black Perdigeon Pinness A middle- violet bloom; ripe towards the middle fixed, oval, dark coloured Plum, power of September dered with a violet bloom; is of a finer Wenworth Plum, A large, oval, yelrich flavour; ripe middle or end of lowish plum, of an acid relish, and feparates from the stone; is a good cu-

Blue Perdigrow Plant. A large, rounlink, blue th coloured Plum, replete
Mirabelle Plum, A finall, round,
with a delicious juice; ripe end of greenish-yellow plum, having a rich
bugust. Abgust, den

White Perdigran Plans.—A middle-fized, oblong, whitiful-yellow fruit, covered with a white bloom; is firm, joicy, rich, and quits the ftone; riperend of August and beginning of Sep-

Roche Courbon, or Red Diaper Plum.— middle-fize, round, fine red Plum, widered with a violet bloom, is high youred, and adheres to the stone;

ripe end of August.

Red Imperial Phin.—A large, oblongoval, flattish, pale-red Plum, covered
with a whitish bloom; is of but a mid-

with a whitish bloom; is or but a middling relish, and parts from the stone; ripe middle of September.

White Bonum Magnum, Mogal or Egg Plum.—A remarkably large, oblong, egg-shaped, whitish yellow Plum, powdered with a white bloom, having a firm pulp that cleaves to the stone; more esteemed for culmary use, than esting raw: the true shoots strong, with very large leaves; is a great bearer, and the fruit is the largest of the plum kind; ripe beginning or middle of September 1 bere are learned to the came of greening Plame, that go by the name

Green-Gages, that are of inferior: Red Benum Magnum, fametimer called sality.

the Great Imperial Plum.—A very large Blue Gage Plum; not of a rich.

the tree a great bearer; ripe end of August.

Apricat Plum.—A large, round, yellowish plum, having a firm, dry, sweet pulp, that separates from the stone; ripe beginning or middle of Septem-

St. Catharine Plum.—A large, oblong, oval, yellowith amber coloured plum; powdered with a white bloom, having a rich juicy agreeable pulp, adhering close to the stone: ripe end of Sep-

Imperative Plan. — A middle-fized, roundiff, dark-red, finely-powdered plum, of an agreeable flavour, the pulp adhering to the floro; ripe beginning of October.

Little Gram Damast Plan. — A finall, round, greenish Plum, powdered with a whitlish bloom, having a green very agreeable pulp, adhering to the stone; ripe middle or end of September.

**Pear Plan. — A moderate-fize oval.

ripe middle or end of September.

Fear Plant—A moderate-fize, oval, whitish-yellow plum, of an inferior flavour, esteemed principally for pre-ferving; ripe late in September.

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21 KI.

Muscle Plum.—A finallish, oblong, flat, dark-red plum, but of an indifferent relish; ripe in September.

Damascene Plum.—A small, roundist,

dark-blue plum, of a tolerably agreed able acid relift, both for eating and cu-linary purpoles, and the tree a great bearer; ripe in September.

fruit.

Thus far is principally all the most noted varieties of this fruit cultivated, in the English gardens, and in the nurferies for sale; shough there are numerous other varieties, particularly of the common fort, growing in the orchards and hedges of farmers, &c. in different parts of the country; all the forts being varieties of one species, first obtained from seed, and the approved forts of them have been multiplied and

forts of them have been multiplied and continued by budding and grafting.

But besides the above varieties of the fruit, there are also the following for

Ornamental plantations.
Double-blo@om Plum-tree--Gold

Ariped-leaved—Silver-Ariped-leaved—and the Roneless plum.

The two following species. Bullace-tree and Slav-buff, grow wild in hedges, but are sometimes cultivated both for

The general pro The general propagation of Plom-trees is, by grafting and budding, and may also be increased occasionally by

By grafting and budding. This is rmed upon flocks of any forts of fowed in autumn in beds of good earth, about two inches deep, and when the plants are a year old, they being plant-ed out in nursery rows two feet and a half afunder, and having from one to two or three years growth, they will be in fit order to graft or bud with she defired forts, which is performed in

the usual way, either low in the stock for dwarfs, or at several seet height for standards. Observing, that when the first shoots from the graft or bud are one year old, those of the trees de figned as dwarfs for walls, &c. should be headed down within five or fix inche of the bottom, more particularly of the bearer; ripe in September.

St. Julian Plum.—A small, round, budded trees, in order to sorce out ladark-violet-coloured fruit, covered terals from the lower eyes, so as to sarry with a mealy powder, but has little nish a proper set of branches, proceeding relish; ripe end of September.

Cherry Plum.—A very small, round, tree, to cover every part of the well cherry-shaped red plum, valued chiefly, and espalier. But as to standards, as a curjosity; and the tree is often planted among showering shunds, for the sake of its beautiful bloom in spring, and its cherry-like fruit exhibit a pretty variety in summer; though by its flowering very early, the bloom is often cut off, and seldom succeeded by much all take their own growth.

Thus say principally all the most ing or budding, are from one to two or three years old, they are of a proper

ing or budding, are from, one to two or three years old, they are of a proper fize for final transplanting into the garden, &c. though trees of fix or eight years old may be fafely transplanted; remarking however, the younger they are planted where they are to remain, the fooner and more firmly they, will establish themselves; and form for hearing.

By layers.—This is performed on the young wood, any time from No-vember till March, chuting the laft vernier till March, chuing the laft frammer's shoots, and lay them by sittlaying; in one year they will be rooted; they must then be separated, and planted in nursery-rows, and trained either for dwarfs or flandards, as may be required.

The double bloffom plum, the two firiped varieties, and ftoneic's kind, are all propagated by budding or grating, upon any kinds of plum-flocks, either for dwarfs, or balf or full ftandards.

And the bullace-tree and floe-hufh or black thorn, are propagated by fow-ing the herries or flores an inch deep in a bed of common earth in sutumn; and the flor-tree also abundantly by fuckers from the root.

Caron PLUM, or American PLUM, (Chryfobalanus:) There are two species; I. with oval indented leaves, flowers wing in clutters, and a fhrubby stalk;—2, with decompounded leaves, whose leaves are oval and entire. whose leaves are pro-They are both astires of the West-India islands, islands, and the warmer parts of Ame- touch in the dark, from its extreme rica, and will not thrive in England, coldness, which is like ice; but what unless preferved in sloves. They are is mentioned of this possonous quality propagated by feeds, which must be procured from their native country, and fown in the fpring.

Thouan Date Plum. See Date

POA GRASS.—Meadow grafs, or that common species of grafs, which principally forms the green covering of our fields, &c.

POCKET, A large fort of bag, in which wool or hops are packed up, in order to be fent from one part of the

dom to the other.

POD, A term ofed to express a pericarpium, confirting of two valves, which open from the bafe to the point, and are separated by a membraneous partition, from which the feeds hang

by a kind of minute stalk.

POISON Take, (Toxicodendron.)

There are several species of this plant growing in most parts of North America.

These plants are preserved by the curious in botany, for the fake of variety; but as there is little beauty in them, there are not many of the forts' cultivated in England. The wood of these trees, when burnt, emits a nox-ious sume, which will suffocate ani-mals when they are thut up in a room where it is burnt; an instance of this is mentioned in the Philosophical Transactions by Dr. William Sherard, which vas communicated to him in a letter from New England, by Mr. Moore, in which he mentions fome people who had cut fome of this wood for fuel, which they were burning, and in a fhort time they lost the use of their limbs, and became stupid; so that if a neighbour had not accidentally open-ed the door, and feen them in that con-

ed the door, and feenthem in that condition, it is generally believed they would foon have perified. This should caution people from making use of this wood for such purpose,

When a person is possoned by handling this wood, in a few hours he feels an itching pain, which provokes a feratching, which is followed by an inflammation and swelling. inflammation and (welling, Some-times a person has had his legs poison-ed, which have run with water, Some of the inhabitants of America affirm. they can diffinguish this wood by the

is most applicable to a fort like the afh.

The juice of the tree is milky, when it first iffues out of the wounded part; but soon after it is exposed to the air, it turns black, and has a very strong for id form, and is corroding; on cut-ting off a finall branch from one of these shrubs, the blade of the knife has? been changed black in a moment's time, to far as the juice had fpread over it, which could not be got off without grinding the knife.

Potson Asn, a species of the poi-

Poison Oak, a fperies of the pol-

Potson Busn. Sa Srungr.

POKE, a fack or bag.

Hep POLES, the unright poles, or plees of wood, round which they bind, twift, and support themselves.

POELARD, a tree that has been fre-

quently polled or lopped, and its top taken off.—Pollards are inferior to coppice trees, in the quantity of wood they yield, and in its value; for the coppice wood is fit for many purposes that the fhrowdings of the pollards can never answer, and therefore brings a better price; but on the other hand, pollards are maintained at a smaller expence, indeed it may almost be faid at none at all; for they require no fences; they take up no quantity of ground; and they are in their shoots above the reach of cattle.

The most frequent and most profitable trees for pollards, are, the wil-low for watery places; the aft for hedge rows, and the oak for commons. But each of these situations will support several others to advantage; and there is scarce any tree that may not be brought to a pollard at the owner's

In general, the hufbandman fhould throwd such trees as are not fit for timber; or any from which he desires to have a present advantage, or which he intends shall supply his family, or the market, with fuel quickly and readlly: for there is no growth fo speedy as that of the tree which is shrowded. Trees intended for shrowding may

be raifed in many places, where it would would not be worth while to have others, because of the injury they would do the ground: for, as to fhrowded trees, the farmers may have the bene-fit of grazing under them, while the tops are growing, fo that little produce of the ground, where that is of any confiderable value, is loft by their growth: and when their heads are for large that they injure the growth of the grafs, they make amends another way, for they then afford thelter for the cattle, the necessity of which is

fufficiently known to every grazier.

POLE-EVIL, An abicefs near the poll of a horfe, formed in the finuses between the noll bone, and the upper-most vertebræ of the neck,

If it proceeds from blows, bruifes, or any external violence, at first bathe the swelling often with hot vinegar; and if the hair be fretted off with an oozing through the Ikin, make use of two pares of vinegar, and one of fpirit of wine; but if there be an itching with heat and inflammation, the fafest way is to bleed, and apply poultices with bread, milk, and elder flowers: this method, with the affiftance of physic, will frequently disperse the fwelling, and prevent this evil.

But when the tumour is critical, and has all the figns of marter, the best methad then is to forward it by applying the ripening poulties already taken notice of, till it come to maturity, and burst of itself; or if opened with and burst of itself; or if opened with a knife, great care should be taken to avoid the tendinous ligament, that runs along the neck under the mane : when matter is on both fides, the open-ing must be made on each fide, and the ligament remain undivided

If the matter flows in great quanif the matter flows in great quantities, refembles melted glue, and is of an oily confidence, it will require a fecond incifion, especially if any cavities are discovered by the finger or probe; these should be opened by the knife, the orifices made depending, and the wound dressed with the common digestive of turpentine, honey, and singure of myrth, and after digestion tincture of myrrh, and after digeRion with the precipitate ointment; or wash the fore with the following, made hot, and fill up the cavity with tow

Take vinegar, or spirit of wine, half

foring water, half an ounce, tinc-

ture of myrrh, four ounces.

This may be made tharper by adding more vitriol; but if the flesh is very luxuriant, it should first be pared down with a knife before the application; with this wash alone, Mr. Oibson has cured this diforder without any other formality of dressing, washing with it twice a day, and lay over the part a quantity of tow foaked in vinegar, and the white of eggs bear together. This last application will ferve instead of a bandage, as it will adhere close to the pole, and come off easy when there is occasion to dress. Some wash with the phagadenic wa-ter, and then fill up the abscess with loofe doffils of tow foaked in Ægyptiacum and oil of rurpentine made hot, and continue this method till the cure is effected.

But the most compendious method of cure, is found by observation to be by fealding, as the farriers term it, and is thus profecuted when the fore is foul, of a bad disposition, and attended with

a profusion of matter.

Take corrosive sublimate, verdigreafe in fine powder, and Roman vitriol, of each two drams; green copperas half an ounce; honey or Ægyptiacum two ounces, oil of turpentine and train oil, of each eight ounces a rectified spirit of wine four ounces a mix together in a hottle.

Some make their fealding mixture milder, using red precipitate infles of the sublimate; and white vitries instead of blue; the following has been successfully used for this purpofe, viz. half an ounce of veuligreafs, half a pine of train oil, four ounces of oil of turpentine, and two of oil of vi-

The manner of scalding is, first to clean the abicels well with a piece of founge dipped in vinegar; then put a fufficient quantity of the mixture in a ladle with a spout; and when it is made feathing hot, pour it into the ablests, and close the lips together with one or more stirches. This is to remain in several days, and if good matter appears, and not in an over-great quant tity, it will do well without any oth dreffing, but bathing with spirit of a pint, white vitriol diffolved in wine; if the matter flows in great abundance

abundance, and of a thin confiftence, it must be scalded again, and repeated till the matter lessens and thickens.

Thefe liquid corrofive dreffings age well with horles, whose fibres are stiff and rigid, and whose juices are oily and viscid; in this case they contract the vessels of the tendons on the hind part of the head and upper part of the neck, which are continually spewing out a matter or icher that can hardly be di-

gested, or the profusion abated without such applications as these. Poley, (Policum.) There are se-veral species of this plant, natives of France, and the warmer parts of Europe; and from thence brought into the English gardens, and are propagated by fetts, cuttings, or flips. POLYPODY, (Polypodium.) Poly-

pody is a capillary plant, growing up-en old walls, the trunks of decayed trees, &c. That found upon the oak is generally preferred, though not fenfibly different from the others. The roots are long and flender, of a reddifth brown colour on the outfide, greenish within, full of fmall tubercles, which are refembled to the feet of an infect; whence the name of the plant: the tafte of these roots is sweetish and nau-

Polypody has been employed in medicine for many ages; nevertheless its virtues remain as yet to be determined. The ancients held it to be a powerful purger of melancholic humours; by degrees, it came to be looked upon as an evacuator of all humours in general; at length, it was supposed only to gently loosen the belly; and after-wards even this quality was denied it; succeeding physicians declared it to be aftringent ; of this number is Boerhaave, who effects it moderately ftyp-tic and antifcorbutic. Por our own part, we have had no direct experience of it, nor is it employed in practice; at is probable that (as Juncker suppo-fes) the fresh root may loosen the belly, and that it has not this effect when dry.

POLYANTHUS, (Polyantha.) The feveral forts of Polyanthules are pro duced by fowing of feeds, which fhould be faved from fuch flowers as have large upright stems, producing many flowers upon a stalk, which are large, beautifully striped, open, flat, and not pin-eyed. From the feeds of fuch flowers, there is room to hope for a great variety of good forts, but there should be no ordinary slowers stand near them, left by the mixing of their farina the foods should be degenerated.

Thefe feeds thould be fown in boxes filled with light rich earth in December, being very careful not to bury the feed too deep, for if it be only flightly covered with earth, is will be fufficient. These boxes should be placed where they may have the benefit the clock, but must by no means be exposed to the heat of the day, es-pecially when the plants begin to ap-pear, for at that time one whole day's sum will entirely destroy them. In the spring, if the season should prove dry, you must often refresh them with water, and as the hear encreases, you should remove the boxes more in the shade, for the heat is very injurious to

By the end of May, thereplants will be firong enough to plant out, at which time you should prepare some shady borders, which should be made rich with neats dung, upon which you must fet the plants about four inches afunder every way, observing to water them until they trave taken root; after which they will require no farther care, but to keep them clear from weeds, until the latter end of August following, when you should prepare some borders, which are exposed to the east, with good light rich earth, into which you must transplant your polyanthuses, placing them fix inches alonder equally in rows, observing, if the season prove dry, to water them antil they have taken root. In these borders your plants will flower the succeeding spring, at which time you must observe to mark such of them as are sine to preferve, and the reft may be transplanted into wildernesses, and other shady places in the garden, where, although they are not very valuable flowers, they will afford an agreeable variety. Those which you intend to preserve may be removed from after they have

done flowering, (provided you do not intend to fave feeds from them) and may be then transplanted into a fresh border of the like rich earth, allowing them the same distance as before, ob-

ferving

ferving also to water them, until they have taken root; after which they will require no farther care, but only to keep them clean from weeds, and the following fpring they will produce ftrong flowers, as their roots will be then in full vigour; fo that, if the kinds are good, they will be little in-ferior to a shew of Auriculas.

These roots should be constantly re-

moved and parted every year, and the earth of the border changed, otherwise

they will degenerate, and lose the greatest part of their beauty.

If you intend to save seeds, which is the method to obtain a great variety, you must mark such of them, which have good properties. These should be, if possible, separated from all ordinary flowers, for if they fland furrounded with plain-coloured flowers, they will impregnate each other, whereby the feeds of the valuable flowers will not be near fo good, as if the plants had been in a feparate border, where no ordinary flowers grew; therefore the best way is to take out the roots of fuch as you do not esteem, as foon as the flowers open, and plant them in another place, that there may be none left in the border but such as you would chuse for seeds.

The flowers of these should not be gathered, except fuch as are produced fingly upon pedicles, leaving all fuch as grow in large bunches; and if the feason should prove dry, you must now and then refresh them with water, which will cause their seeds to be larger, and in greater quantity, than if they were entirely neglected. In June the feed will be ripe, which may be eafily known by the pods changing brown, and opening; fo that you should at that time look over the plants three times a week, gathering each time fuch of the feed-veffels as are ripe, which should be laid upon a paper to dry, and may then be put up until the feason of fowing.

As the plants which arise from seeds,

generally flower much better than offfets, those who would have these flowers in perfection should annually fow

their feeds.

POMEGRANATE (Punica.) This tree is a native of Spain, Italy, Portugal, &c. but when planted against a warm wall, will often produce fruit VOL. II.

in England. There are feveral varieties, and may be propagated by layers.
POND, a refervoir or receptacle for

collecting and preferving water.

The necessity of water, in all pastures, is self-evident; as cattle cannot live without it, and the driving of them far for it is known to be prejudicial to their health, in hot weather, befides being attended with great trouble, and a confiderable loss of time. This is fo fensibly felt in many parts of England, that people are obliged to dig wells, even to such a depth as, frequently, to require the affistance of a horse to draw up the water. The means of render-ing it easily come at must therefore inhance the value of the land where it can be so procured, and it is of very effential confequence to the husband-

Where the furface of the ground is fand or gravel, there feldom is occasion to dig deep for water; because such foils generally lie upon marle, or fome other rich earth, through which the water cannot descend. Beds of clay are most commonly thicker than those of fand or gravel; and chalk is, too often, the thickest of all. But whereever water is wanting, the farmer should bore through the incumbent earth, if he intends to fit his land for paffure: and if he finds the expence of obtaining it too great, his best way will be to convert the ground, so cir-cumstanced, into arable, or to plant it with timber-trees suited to the nature of the foil.

Wherever water stagnates in a fandy or gravelly foil, the hufbandman fees at once at what depth is the furface of the earth which retains it. other foils, and when this does not happen, Palladius, and the authors of the Maifon Ruftique, give the following directions how to feek for water, with the greatest probability of success.

Where rushes, reeds, slags, willows,

or other aquatic plants grow sponta-neously, or where frogs are observed to lie squatted down close to the ground, in order to receive its moisture, there generally is water underneath, Perfons who make it their bufiness to find out fprings for fountains, cafcades, &c. look upon it as an infallible fign of fubterranean water, when they fee a vapour arise frequently from the same spot of ground. Others affare, that wherever swarms of little slies are seen constantly flying in the same place, and near to the ground, in the morning, after sun-rise, there certainly is water under that spot. Again, where water is wanted on land apparently dry, let a man, before sun-rise, lie down flat on his belly, resting his chin upon his sit placed close to the ground, that his view may be directed quite horizontally, and not rise too high, and in that situation let him look stedsastly toward the east. If he then sees a tremulous vapour arise from any particular spot, let him mark the place, by noticing some neighbouring tree, thrust, or other indication, and he will find water underneath it. But this experiment is to be made only on ground whose surface is dry; because other exhalations, from a damp surface, would be apt, in this case, to missead the enquirer.

Another way is thus: Dig a hole three feet wide, and at least five feet deep, and place at the bottom of it, when the sun is about to set, a pan, or bason, rubbed with oil on the inside: let the bottom of this vessel be uppermost; cover it with dry hay, fern, or rushes, and over that with earth; and if any drops of water are found standing on its inside the next day, a spring is probably not far off. Or, put a new, unbaked, but well dried, earthen vessel into such a hole, and cover it as before; and if there be water in that place, this vessel will be found soft and wet the next day. Likewise, if wool be left all night in a trench of this kind, and water can be squeezed out of it the next day, little doubt remains but that plenty of water may be met with there.

The month of August is generally looked upon as the most proper time to search for water; because, as the heat of the preceding summer will have warmed the earth to a considerable depth, any steam arising from water resting on an impervious soil underneath, and particularly in hollows on the surface of that impervious foil, will then be most exhaled by this warmth. Now it is this steam, or vapour, which produces the before-mentioned signs,

By whatever method water is found, the means of coming eafily at it are the next confideration. If it be on a plain,

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there is no other way than digging a well. In doing this, the substanceunder the fand or light foil must be dug into, to form a refervoir of water for occasional wants; and this refervoir should be made deep and large, in proportion to the quantity wanted. If there were no such reservoir, the wa-ter, after having risen a little above the impervious body underneath, would glide along its furface, as usual, and very little of it could then be obtained, either by pumps, buckets, or any other way employed to raise it. If the well is made in a floping ground, and the declivity is sufficient to give it an horizontal vent, it will be worth the husbandman's while to dig such a pasfage, and, by means of pipes, or any other conveyance, to carry the water across the light soil, through which it would otherwise fink. The greatest quantity of water will be obtained in this manner, because there will then be a continual fiream.

If the foil is very deep, and its furface has inequalities in which rainwater runs in any quantity; this may be collected in ponds made in the loweft parts of fuch grounds.

If a body of clay is found near the furface, it is worth the farmer's while to bore, that he may know, at what depth a bed of fand or gravel may be met with, for he will be fure to find plenty of water in this last. If this be in a declivity, he need only cut an horizontal passage, and the water will flow fo freely as even to double the value of his land.

Here again the farmer needs not ever to be at a lofs, because it cannot be very difficult to make a pond in a clayey soil, which is, of itself, retentive of water. But it may, perhaps, be adviseable, even in this, to cover the bottom of the pond with a coat of gravel, in order to prevent its being poached by cattle, whose feet would otherwise be apt to sink deep into the clay.——Some farmers judiciously pave the declivity by which the cattle enter into the pond, and this renders it much more lasting than it would otherwise be, and preserves the water clean.

be, and preferves the water clean.

When ponds are made in a loofe foil, much more care is necessary. The bottom and sides there must be covered with a thick coat of the toughest clay,

from a foot to two feet thick, well rammed down. Some have added hair and loam to the outer part of this covering, with a view of rendering it lefs liable to chap; but a thick coat of gravel is more necessary here, that the feet of the cattle may not pierce through the clay. Perhaps the expence of paving the whole inside of a pond might, in the end, be money well laid out.

The greatest difficulty of finding

The greatest difficulty of finding water is in chalky foils, because these are not, of themselves, very retentive of it, and generally lie in such thick beds, that it is expensive to dig through them. However, it should be tried; and if sand or gravel be found underneath, water may be depended on.—Even here, ponds are easily made, by digging into the chalk, and lining them with a coat of clay, as before directed. If there be a supply of proper manure, such as clay or marle, this situation is well adapted to grain, which loves to shand dry; and as this kind of ground produces more forward crops than clayey or strong soils, it may be sowed early with corn, which will not, in that case, be so apt to be parched up as grass is, by the summer's drought. If a good soil can be made here, a foot deep, it will yield plenty of various forts of pasture, either roots or grasses, as the farmer shall judge most proper: or it may be planted with different kinds of timber-trees.

POPLAR-TREE, (Populus.) A genus of trees, of which botanists enumerate four species, viz. the common white poplar, with large leaves; the common black poplar, and the poplar with trembling leaves, called the aspen-tree. The poplar, whether black or white, may be easily propagated, either by layers, cuttings, or suckers, of which the white kind always produces a great many from the roots. The best season for the transplanting these suckers is in October, when the leaves begin to decay; and they should be removed into a nursery for two or three years, at the end of which time they will have got strength enough to be transplanted into the places where they are to remain.

places where they are to remain.

When they are to be propagated by cuttings, it is best to do that in Fe-

bruary, cutting off large truncheons of eight or ten feet long; which, being thrust down a foot deep in the ground, will take root very quickly, and, if the foil be moist, will grow to a considerable size in a few years.

The black poplar it not so easily raised from these large truncheons, but should be planted in cuttings, of about a soot and a half long, planting them a foot deep in the ground. This will grow on almost any foil, but does much better on a moist one than on any other. They are the fittest of all trees for raising a shade quickly, as they will grow source feet in height sometimes in one season, and in sour or sive years will be large trees.

or five years will be large trees.

A confiderable advantage may be obtained by planting these trees upon moist boggy soils, where few other trees will thrive: many such places there are in England, which do not, at present, bring in much money to their owners; whereas, if they were planted with these trees, they would, in a very sew years, over-purchase the ground, clear of all expence: but there are many persons in England, who think nothing except corn worth cultivating; or, if they plant timber, it must be oak, ash, or elm; and, it their land be not proper for either of these, it is deemed little worth; whereas, if the nature of the foil were examined, and proper forts of plants adapted to it, there might be a very great advantage made of several large tracts of lands, which at this time lie neglected.

The wood of these trees, especially of the white, is very good to lay for shoors, where it will last many years; and, for its exceeding whiteness, is, by many persons, preserved to oak; but, being of a soft contexture, is very subject to take the impression of nails, etc. which renders it less proper for this purpose; it is also very proper for wainscotting of rooms, being less subject to swell or shrink, than most other forts of wood; but for turnery-ware, there is no wood equal to this for its exceeding whiteness, so that trays, bowls, and many other utensils, are made of it; and the bellows-makers preser it for their use; as do also the shoemakers, not only for heels, but

F f 2 also

also for the soles of shoes: it is also very good to make light carts; the poles are very proper to support vines, hops, &c. and the lopping will afford good fuel, which, in many countries,

is much wanted.

POPPY, the name of a plant, of which, feveral species are cultivated in gardens for the beauty of the flowers. They are all easily propagated by fowing the feeds in autumn. When the young plants come up, they are to be cleared from weeds, and thinned to a proper distance by pulling some up, where they stand too thick; for they never thrive well, if they are to be transplanted. They are to be left, according to their fizes, at fix, eight, or ten inches distance.

They are very showy flowers, and make a splendid appearance in gardens, but they are but of a short duration, and are of an offensive smell, which makes them less valued at present than

they have been.

Some fow these plants in spring, but it is not fo well; because they then have not time to get strength before autumn, when they are to flower; and, for that reason, those sown in

fpring usually flower weakly.

The heads and stalks of these plants contain a milky juice; which may be collected in confiderable quantity, by lightly wounding them when almost ripe: this juice, exposed for a few days to the air, thickens into a stiff tenacious mass, agreeing in quality with the opium brought from abroad. The juices of both the poppies appear to be fimilar to one another; the only difference is in the quantity afforded, which is generally in proportion to the fize of the plants: the larger or white poppy, is the fort cultivated by the preparers of opium in the eastern countries, and for medicinal uses in this.
Poppy heads, boiled in water, im-

part to the menstruum their narcotic juice, together with the other juices, which they have in common with vegetable matters in general. The liquor firongly preffed out, suffered to settle, clarified with whites of eggs, and evaporated to a due confistence, yields about one-fifth or one fixth the weight of the heads, of extract. This possesses the virtues of opium; but requires to

be given in double its dose to answer the same intention, which it is said to perform without occasioning a nausea and giddiness, the usual consequences of the other. A strong decoction of the heads, mixed with as much fugar as is sufficient to reduce it into the confistence of a syrup, becomes fit for keeping in a liquid form; and is the only officinal preparation of the poppy, Both these preparations are very useful ones, though liable to variation in point of frength: nor does this inconvenience feem avoidable by any care in the prescriber, or the operator; since the poppy heads themselves (according to the degree of maturity, and the foil and feafon of which they are the produce). contain different proportions of the narcotic matter to the other juices of the plant; as has been observed in the Pharmacopœia reformata.

The feeds of the poppy are by many reckoned foporific; Juncker fays, they have the same quality with those of henbane, and Herman looks upon them as a good substitute to opium; misled probably by an observation which holds in many plants, that the feeds are more efficacious than the veffels in which

they are contained.

The feeds of the poppy have no-thing of the narcotic juice which is lodged in their covering, and in the stalks; an oil expressed from them has been used for the same purposes as oil olive, and the seeds themselves taken as food: their tafte is fweetish and farinaceous.

Red Poppy or Red-Weed. The common wild red poppy is one of the most mischievous weeds the farmers are plagued with among their corn, and it is the most difficult to thoroughly destroy of almost any other. Its feed will lie a long time in land unploughed, without ever shooting; but they will be sure to grow with every crop of corn. Mr. Tull gives an instance of the feeds of this plant being buried four and twenty years in a field of faintfoin, and at the end of that time, the land being ploughed for wheat, they all grew up among the corn, though they had lain dormant fo long before,

The flowers of this plant yield upon expression a deep red juice, and impart the fame colour by infufion to aqueous liquors. A fyrup of them is kept in the shops; this is valued chiefly for its colour; though some expect from it a lightly anodyne virtue.

Horned Popry. Celandine.

Prickly POPPY. [Argemone.] Infernal

Spatling POPPY. See Berry-bearing

CHICKWEED.

Wild POPPY. See Red POPPY.

POTATOES. [Lycoperficen.] The name of a well-known plant, the roots

of which make a very nourishing food. Mr. Houghton describes the potatoe to be a bacciferous herb, with esculent roots, bearing winged leaves and a belled flower, and fays, that, according to his information, which is allowed to be very right in this respect, it was first brought from Virginia, by Sir Walter Raleigh, who, stopping at Ireland, ahout the year 1623, gave away a number of these roots, which were planted there, and multiplied so exceedingly, that, in the wars which happened afterwards in that country, when all the corn above ground was destroyed, potatoes became the chief support of the people; for the foldiers, unless they had dug up all the ground where they grew, and almost fifted it, could not have ex-tirpated them. The Philosophical Transactions observe likewise, that the Irish were relieved from their last severe famine, which lafted two years, during which all their corn failed, merely by the help of this root. From Ireland it was brought to Lancashire, now famous for its potatoes; and the culture of this plant has, within these last thirty years, been extended to almost every part of England. The rich, who, at first, deemed them fit for none but the meaner fort of people, now esteem them so much, that Mr. Miller thinks the quantity of them which is cultivated around London only, exceeds that of any other part of Europe.

The red-rooted potatoes have purplish flowers, and the white-rooted (for Mr. Miller distinguishes only these two general varieties) bear white flowers.

The potatoe feldom perfects its feeds in England; and if it did, the raiting of it from them would be much more tedious and uncertain than propagating it by its roots, as is the general and right method: for these multiply exceedingly, and may be made to yield walt crops, with little coft or labour,

"The Irish busbandman, says Mr. Switzer, after blaming the English for planting this root uncut, because it often contains five or fix eyes, or perhaps more, from which the produce of the enfuing year is to fpring; and also for not allowing that bulb, or rather the great number of shoots and buibs that proceed from it, a space of earth sufficient for their nourishment, which is the reason why so many poor, stinted, unserviceable potatoes are dug up in the autumn, relates the practice of his country, which is to chuse middle-fized roots, for the largest are generally eaten, to single out the eyes that seem strongest and most vigorous, and to cut them out in squares of at least half an inch every way : fo that one root will fometimes furnish three or four good pieces

"The ground, prepared for planting, is marked out for beds four or five feet wide, with intermediate alleys of two or three feet. It is then trenched, only a fingle spit deep, and the bottom of the trench, made as in common garden-trenching, is covered with dung, long and short, taken out of a wheel-barrow which stands at the labourer's The potatoe-eyes, cut as before directed, are placed upon this dung, at about five or fix inches afunder ; and this trench is filled up with the mould taken out of the next, which is marked by a line at the distance of two or three feet. This trench is again filled with the mould of the next, and fo on to the last, which is filled from the

"The use of the dung thus laid at the bottom of the trenches, is not only to make the roots grow fingle, for not above one root, or at most two, will in this case be produced by each eye, and these will be large and well fed; but it is attended with the farther advantage of making the potatoes run, and spread themselves to a certain determinate depth, which is no small help to their

growing large. The last thing to be done to them is, in April or May, (for they are planted in February or March) as foon as they begin to rife, to dig the earth out of the alleys as is done for asparagus, and to cover the potatoe bed with it, about five or fix inches thick. This

will give new life and vigour to the roots, will keep the green from running too much to haulm, and will make the bulbs grow much the larger. By this means the crop of fine large potatoes will be almost the double of what is obtained when they are planted promifcuously in the common way; nor will any farther culture be requisite till they are fit to be dug up; except the pulling out of some of the largest weeds."

Mr. Miller's reasons for difapproving of the planting, either of the fmall off-fets entire, or the eyes cut out of larger poots, are, that though the former gemerally produce a greater number of soots, thefe roots are always fmall; and that the cuttings of the larger roots are apt to rot, especially if wet weather happens foon after they are planted. He therefore recommends, to make choice of the fairest roots for fetting, and to allow them a larger space of ground, both between the rows, and etween the plants in the rows; and he affures us that he has observed, when this method has been followed, that the roots, in general, have been large the following autumn. M. Duhamel, in his Elements of Agriculture, does not object at all to the planting of the cut-

The foil in which this plant thrives beft, is a light fandy loam, neither too dry nor over moift, but brought to a fine filth, and ploughed very deep; for the deeper the earth is loofened, the finer and larger the roots will grow. In the fpring, just before the last ploughing, a good quantity of rotten dung should be fpread on the ground, and this should be ploughed early in March, if the season be mild; otherwise it had better be deferred until the middle or latter end of that month; for if a hard frost should come on soon after the roots are planted, they may be greatly injured, if not destroyed, thereby; but if they can be planted in the spring, without that danger, the better it will be.

The last ploughing should lay on the ground even, and then surrows should be drawn three feet asunder, and seven or eight inches deep. The roots should be laid at the bottom of these furrows, about a foot and a half asunder, and

they should then be covered in with earth.

After all, the ground intended for potatoes is planted in this manner, it must remain in the same state till near the the time when the shoots are expected to appear; then it should be well harrowed both ways, as well to loofen the fursace and render it smooth, as to tear up the young weeds which will have begun to grow by that time. If much wet has sallen after the planting, it may have caked the sursace of the earth, so as to retard the sprouting of the plants; and this harrowing will, in such case, almost answer the intent of a first hoc-

I have placed the rows of potatoes at three feet distance, continues Mr. Miller, in order to introduce the hosplough between them; because that will greatly improve their roots; for by twice stiring and breaking of the ground between these plants, not only weeds will be destroyed, but the foil will be so loosened, that every shower of rain will penetrate to the roots, and greatly quicken their growth. But these operations should be performed early in the season, before the stems or branches of the plants begin to fall and trail upon the ground: for after that, it cannot be done without injuring the

If thefe hoe-ploughings are carefully performed, they will prevent the growth of weeds, till the haulm of the plants cover the ground; and after that there will be little danger of their growing fo as to injure the crop; for the haulm will keep them under: but as the horse-hoe can only go between the rows, it will be necessary to make use of the hand-hoe to stir the ground, and deftroy the weeds in the rows, between the plants. If this be well done in dry weather, immediately after each of the two horse-hoeings, it will be fufficient to keep the ground clean until the potatoes are fit to be taken up ; which will be very foon after the first frost in the autumn has killed the haulm. They should not remain much longer in the earth, left the roots themselves be frost-bitten, which spoils them. A four or five pronged fork is better to dig them up with, than a spade, because it is less apt to cut them; but the principal principal thing to be confidered here, is the clearing of the ground thorough-ly of them: for if any are left, they will shoot up among the next crop, whatever it be, and do considerable damage, especially if it be wheat, as is generally the case, sown in the com-

mon broad-caft way.

The best way of keeping these roots during the winter, is to lay them up in a dry place in very dry fand, or in fine

and perfectly dry earth.

The method of laying dung only at the bottom of the furrows in which the roots are planted, " is a very poor one, (fays Mr. Miller) because, where the potatoes begin to push out their roots, they are soon extended beyond the width of these surrows, and the new roots are commonly formed at a distance from the old: so will be out of the reach of this dung, and confe-quently will receive little benefit from it." But rather the confear would But rather the contrary would feem to be the case, according to the Irish husbandman, who, seems to speak from experience, when he fays, he had intended expressly to answer this very objection, that "the dung is placed at the bottom of the furrows on purpole to make the roots grow fingle; and that its being so placed is attended with the farther conveniency of making the potatoes run, and spread themfelves at a certain determinate depth, which is no fmall help to their grow-ing large." Facts must here determine which is right: as they also must in regard to some parts of what Mr. Miller adds in the following words: " As most farmers covet to have a crop of wheat after the potatoes are taken off the ground, so the land will not be so thoroughly dreffed in every part, nor to proper for this crop, as when the dung is equally spread, and ploughed in all over the land, nor will the crops of potatoes be fo good. I have always observed, where this method of planting the potatoes has been practifed, the land has produced a fine crop of wheat afterward, and there has fearee one shoot of the potatoe appeared among the wheat, which I attribute to the farmers planting only the largest roots: for when they have forked them out of the ground the following autumn, there heve been fix, eight, or ten large roots oldinaxappe in

produced from each, and often many more, and foarce any very fmall roots; whereas, in fuch places where the fmall roots have been planted, there has been a vaft number of very fmall ro produced, many of which were fo small, as not to be discovered when the roots were taken up; so have grown the sol-lowing season, and have greatly injured

whatever crop was upon the ground."
Will not a thorough ploughing and
good harrowing, after the crop of potatoes has been taken off the ground, intermix the dung laid in the furrows and the contiguous earth most impr nated thereby, with the reft of the foil; perhaps almost as well as if the dung had been spread equally over the whole field, at the very first? If it will, the presumption feems strong in favour of the Irish analysis. the Irish method. For certain it is, the Irish method. For certain it is, that the land ought to be well ploughed and harrowed after the potatoes are removed, before it is fown with any other crop; unless the feed for that crop, which generally is wheat, be sprinkled by hand between the rows, as they are dug up, and there covered with the earth then turned over. This is tradified in some parts of France, but practifed in some parts of France: but as M. Duhamel observes, the grain i fo apt to be distributed unequally in this method, that it is better to ploug the ground, and fow it, in the regular

If the farmer apprehends that his land has not been thoroughly cleared of the potatoes, and is therefore afraid of their damaging his enfuing crops his best way will be to lay it up very rough against winter; because the frosts of that feafon are known to kill and rot all potatoes in the ground exposed to them, and it will at the same time be thereby finely prepared for spring corn; especially as it will have been well enriched by the haulm of the po-

tatoes fying upon it.

Though potatoes delight most in a light (andy loam, neither too dry, nor over moift, as was observed before; yet Mr. Maxwell fays he has feen them thrive well on ground that feemed to be very bad; even in deep mos, which could not bear horses to plow it, but which is confiderably bettered by thems and on coarfe heath, where they were fucceeded by grain, without more dung

than was laid on at first. Of so improving a nature are they, and so much is the land enriched by the rotting of their stalks among it, and the digging

it gets in raising them.

Several experiments communicated to M. Duhamel concur to prove the extraordinary increase of potatoes cultivated with the horse-hoe; but as this will always be the consequence of the new husbandry, wherever it is properly used, I shall only borrow from him, on this occasion, M. de Villier's account of his method of practice, because it is the clearest and most con-

cife :

"There are, says he, several sorts of potatoes. That which I cultivate is the middle-fized. It is planted about the end of April, or the beginning of May, and it ripens in October. My beds are five seet wide. I give them two ploughings in the spring; at the second of which I half fill the main furrow. Before I plant, I cut a small surrow with the single cultivator, which likewise loosens the earth; but if it be moist, I put a double springtree bar to the cultivator, to avoid the poaching of the horses. I then plant the potatoes a soot asunder in the row; choosing for this purpose such as are about the size of a walnut. They are about the size of a walnut of the cover them sufficiently of its own accord, a little more is pushed down upon them.

"A flight hand-hoeing can hardly be avoided afterwards, to defiroy the weeds which spring up at the same time as the potatoes: but this hoeing need not extend farther than three or four inches on each side of the row; because the plough will do the rest.

"I give the first hoe-ploughing in the spring, as for wheat; but earlier or later, according to the condition of the

ground.

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"My fecond hoe-ploughing is given as foon as the plants are tall enough to be earthed up; that is to fay, when they are eight or ten inches high. I then turn the earth up towards them as much as possible.

As this plant foreads greatly, and flicots out very fast, it would be impossible to give more than two of these

hoeings, if one should neglect to take advantage of the time when its leaves and branches do not entirely cover the bed.

"The roots are dug up in October or perhaps famewhat earlier or later, according to the feason, with a strong iron prong; shaking and clearing them well from the mould. They are then lest to dry for some hours, and are asterwards laid in a place where the frost cannot reach them.

"This fruit, which yields furprifingly, is of great fervice to feed and fatten cattle, especially when it has been boiled a little. They like it very well raw, after it has been kept a few months above ground: but it is best for them after it has been boiled."

The reader is obliged to the ingenious Mr. Irwin for the following account of cultivating potatoes in Ireland, and which we shall give in his own

words:--

"The potatoe, fays he, is become a root of fuch immenfe utility, especially to the poorer fort, within this century, that too much, methinks, cannot be faid towards improving and extending the culture of it.

"In Provence, Dauphiny, Switzerland, and feveral other parts of Europe, and even in America, it yields commodious, abundant relief to the more indigent, as being eafily and plenteoufly propagated in almost every kind of fail

propagated in almost every kind of soil,
"In Ireland particularly it is the
principal food of the poor during the
greater part of the year, without which,
fince the late unproportionable rise of
lands in that kingdom to the trade of
it, they could not well subsist. And,
indeed, it seems a particular favour of
Providence sent to them on this ac-

count.

"In times, not very remote, lands were cheap there, and the peafantry, confequently, lived on nourifhment fomewhat more luxurious, and diverticed: their labour also was lefs burtheensome. But now, being obliged to work hard at four-pence and fix-pence a day, and their rents considerably augmented, it will not feem surprising, that this root alone has become the staple of their support, and that they have been the first people in Europe, or, perhaps, in the world, that have led the

example in an extensive improvement of it. This may naturally be supposed to arise from close-pressing necessity, the most cogent and inspiriting of all

the most cogent and inspiriting of all motives.

"In truth with much reason; for a poor labourer, in that ill-lated country, is driven to seek his sole refuge for sub-fiftence in this root, from the inexorable imposition of a hard-hearted landlord, (forry I am to have it to say, soo many of them grind the poor; but hope it will not be long the case) who thinks his cample get too much for his land out of the persons, or purses, of his dependents, and who hath so inverted the old customs, that a hewer of wood, and drawer of water, (and many of these perhaps descendants of some proprietors can afford himself but a miserable seamy, platter of postatoes, seasoned with a palarable grain of falt, and washed down with a draught from the next rivulet, to support the latigue of thirteen hours (statute quantity) of unceasing labout, about his ancient mansion-house, or in his elegant gardens, well-laid out closes, or refreshing bog-holes.

dens, well-faid out closes, or retrelling bog-holes.

The potatoe is a root, a little of which is very filling, quickly appealing hunger; but by no means a lafting folid nouriffment for a labourer, as evidently teltify the qualid Jooks of numbers of the pourer friffs; though at the same time it is in general wholfome, agreeing with most stomachs that can vary their tood; but, like other productions of the earth, forbid in many cases by the medicinal tribe.

There are several ways of breeding potatoes in Ireland, which partly arise from the difference in foil, and kinds of seed. The different soils for this purpose in use in my neighbourhood, for about twenty years past, and which, I believe, are pretty general, are the following, wherein they are abundantly propagated, viz.

propagated, viz. any manure, vulgarly called grass po

tatoes.

4 When a leafe is near being expired, that is, during the last feven years of it, if there be no covenanta grounded on the statute against waste, &c. the tenant, finding no hopes of a renewal, fets considerable tracts in this way, where the foil will admit of it,

Vot. II.

gravelled, (otherwise sanded) which gravelled, (otherwise sanded) which sught to be done a year before planting. But the pooret fort, who are the chief cultivators of this root, are obliged to sand and plant at the same time, or nearly thereabouts a which is very destructive to themselves, their potatoes not having the proper benefit of the manure; at least one part in three of the return are on this account exceeding small, and are from hence called porcens by them, being a diminutive expression. Whole fields are set in this way, (commonly called spaddane) in which a considerable trade is driven; especially in the provinces of Muniter and Connaught.

Had it been properly and mode-rately done, it would be a fine prepa-tation for the inorgale of corn, and the laying down, and bringing in, or in other terms, the reclaiming of land, but the poor, do it for negligently, and but the poor do it so negligently, and mangle it so intolerably, having but a short temporary use in it, besides paying near double the worth for it, that this manufacture, which might otherwise be of considerable benefit to install the solution of the s and, is, as now carried on, rather the

Contrary Thirdly, On ground previously gravelled (that is, perhaps for months before) and dunged at fetting time. There is but little done in this way, except by the gentry, and renters of land for their private use; it being as yet out of reach of the peasantry, unless in a few instances.

Fourthly, On the ley with dung alone. Marle is not in use in my neighbourhood, though there is plenty of it in several parts of it; therefore cannot yet inform you how it would do for the potatoes in that district. As to potatoes fet in the ley with dung alone, this manufacture also is done, as you may judge, mostly by the more opulent. I have, however, often feen large fields fet in this way to the public : but it is not of late years fo much the custom, this fort of land being commonly kept for grazing: this hurts the land; and any preparation out of the ley for potatoes will, if not previously gra

"Fifthly, In arable or stubble land, (vulgarly called sticking or thrusting of potatoes, because they are sown with a Gg

flick, pointed at the end, about an inch diameter and two feet long, with the loy, otherwise the Irish space.) In this method dung is also used, which

thall be noticed in its place.

"These are the most general methods that now occur to me, or I be-heve that are in use. There are, how-ever, someothers arising from the quaever, formeothers arising from the qua-lity of the feed, practifed only by the curious, in which the plants are put down at nine or twelve inches afunder every way, in little hillocks, (like the hop plant) as practified in feveral countries in England; and, if you land them at certain proper flated times while vegetation continues, you will have a handfome act of large oblong potatoes at every landing

"I made the experiment of one fort in my garden; and out of half a dozen posatoes cut into feveral pieces, each having an eye, I had, to the best of my remembrance, without exaggeration, a quantity equal to twelve Winchester bushels,

"This kind of potatoe is introduced into Ireland but of late years: It is

however well known there.

"A posatoe entirely black is also in also in Fingal, near Dublin, fructifies abundantly, and cate exceeding dry, which principally marks the goodness of this root in almost every inflance.

"There are feveral kinds of potatoes.
Mr. Maxwell, of Arkland in Scotland,

a very judicious gentleman, has particularly noticed fix forts, viz. The
long red, the round red; the long white,
the round white, or Spanish potato;
the blue, the leather coat, and an early
kind that comes in a month fooner than the common fort, though planted at the fame time,

"This root being greatly manu-factured in Ireland, they mix most of the better forts promiseuously, both for

use and feed.

years ago, the large red potatoe, then salled the Caffonian, (perhaps from Caffile) as also the oblong Spanish white potatoe, to be chiefly in ufe; but now a leffer fort, fuch as the Muniter or kidney potatoe, of a whitish or lightish yellow colour, the leather-coat, or sound red Cronian potatoe, with a rough

potators, because they are from set b a

thick fkin, and particularly that filled the Spanish white potatoe, are mostly in use.

"All these forts are cut for seed according to the number of eyes on them, and thrive generally well with very little care, so that all forts being now to plenty, and answering so well, there are (as we may easily judge) no over-nice distinctions made about them there. The pooter Irish, who affect not to plant this root in bottom lands, or wet swampy grounds, unless hard presed for foil, are even in this case seldem attentive about the kind of potatos they put down, the return being commonly wet, unsit for eating, and only proper for seed, which (from my little experience) I think makes but indifferent, though sown in the best prepared upland; for too much moissure, as well as too much dung, makes a potatoe wet; and plant it when you will, I am apprehensive it never loses this quality, which is the worst it can have, except being rotten, or frost-bit; nor will any ear so well, raised from dung, as without.

"As the potatos thrives in different " All thefe forts are cut for feed acout.

out.

"As the potatoe thrives in different foils, to there are different methods of cultivating it: I will therefore now proceed to that most generally in use in my neighbourhood, (and indeed all over the kingdom) called grass potatoes or spuddane, and by some (improperly) conacres, which seems to be the natural culture, but doubtless not so good to make the land stand long proof, (notwithstanding the gravelling) as is artificial manures were added, such as dung, compost, lime, &c.; for marle, time-stone, gravel, sea-land, shells, &c. I consider in the class of natural manures and the best; and providence hath kindly given them in every spot, (even in the unpromising deserts of Zara, &c.) had we known how to come at them.

"Land in the ley, [as I said before)

"Land in the ley, (as I faid before) and that which requires no manure, the Irith feek most greedily after, some of which has not been ploughed per-haps within this century: fo that you can only just distinguish that it has been tilled, and the tilth generally cur-ved, the old people inclining the plough with the casual shape of the field, so as

of here the doll will admit

Wote II

to let the water in the furrow have a

drip or fall.

When a peafant has the good luck to get a bit of fuch choice ground, (for two or three of them will be concerned in an acre, and few take more than one) he follows the old ridge with his leg, or Irish spade, unless compelled by the possession of the land to make his ridges possession of the land to make his ridges straight, which he most unwillingly does, and at best but aukwardly, with a repe made of hay or straw; or some of his wife's worst tow; neither of which stretching tight, and often breaking, seldom admit well-looking ridges; these he makes from one end of his ground to the other, the bods being about three, or at most four feet wide, and the surrows, or trenshes, about two. When he deposits the feed on his bed, at about four or six inches at most asunder, he divides the surst of his furrow in two equal parts, which he turns alternately in sods on the edge or verge of each bed, the green side on or verge of each bed, the green fide on the potatoes, cutting the fods on three fides or angles, leaving, that next the bed uncut. This laborious work the poor fellow does furprizingly quicku two more men follow him, one digging the under firstum, and throwing up on the middle of the bed as much of the earth as he conveniently can with his log, the remainder the third manicalts on with his shovel, settling the hed in the form, or manner, in which

"Some cover their potators at first (through want of time) with only the fod, and about four or five inches of caft the last covering on them, not for a month, or fix weeks after; which possibly may greatly check their growth. Many account this the best way, and it is become common; but I attribute the neglect of not finishing their pora-toes (as the term is) in doe time, to no want of proper knowledge in the common Irish, but their inability to

" This peralcious method may poth bly dethoy or check the weeds; but certain barn, it will not contribute to the increase or largeness of the root, in the unphysical or over heavy manner in which I have seen it done; because this lower firstum, which is mostly fand, remains on the top of the richeff part of the foil, and being thus unmix-ed with it, prevents it from receiving the proper benefits of the air, &c. be-fides, too great a covering on the potatoe is highly prejudical to is.

tator is highly prejudical to it.

"In other cases, these straums thrown up, and mixed into a good tilth, would answer wonderfully, mixing well being the life of good tillage. I would therefore in this place recommend to our farmers (who are too penurious, of their land) to make their potatoe trenches so wide, as not to require throwing up much of the third or fandy firatum on the last covering, or landing, of their potatoes and they will find a much greater return, and one half (or more) less of porter, or small potatoes which is an object highly worthy of their notice. The experiments I have made, I purpose reexperiments I have made, a purpose pealing on my return to I reland, and hope to prove this fimple method to exceed that in the hillock, or in the erintents I have made, I purpofe re drill ways and on as que made alov

"In this manner all ley land is fown with potatoes by the common people, and most others, whether manered or not. If dunged, the dung is laid out as the ridges me to be but the fand is foread all over the fartage. Common ly little boys and girls precede the fetters on the ridges Asymptohich frey do very quick; and tolerably well, at this appointed distance? This feems giddy part of the business? This feems gidd to their years, but tuffen makes them perfect in it,

the neglect of not finishing their poratoes (as the term is) in dee time, to
no want of proper knowledge in the
common Irish, but their inability to
give the proper attention to their own
little affairs, occasioned by the greedy
feverity of their masters, as before
observed.

4 Others there are (and many) who,
making the surrows unproportionably
narrow to the beds, throw up a third
spit or stratum, and perhaps not until
to cover them; but this the poorer fort
cannot well compass to do, and always
avoid it when they can get a fresh or
ley surface, and the stratum of the stratum, and perhaps not until

G g 2

" Nor do they fow them to chufe, the fecond year, in the fame ground, with-out dung or fome other artificial ma-nure, (for the natural, such as fand,) narle &c, would not do) unless it be exceeding good in ment oved I doi

" Lime, indeed, in this case would ery probably answer, but it is rarely

"There is also a custom; a good deal in use, which is by sticking or thrusting potatoes in stubble land fresh ploughed, which is done in this man-ner; a man (but feldom two) goes on the crown of a narrow ploughed fet, and flicks his ley, or Lish spade, in it, every here and there, with his right toot, holding it in his lest hand, and right hand, that contains the feed, (a convenient quantity of which has contains the feed, (a convenient quantity of which he care s in an apron or cloth tied round his middle, fo as to let the contents be eafily come lat, he throws one, and cometimes two fets, or eyes, into the opening which the by makes behind, and on his drawing it away, the loofened earth falls in and covers them : Soon, after he dungs the ridges, and method, with mould out of the fuerows

"In Scotland after the plough, the ploughman letting the first are many who flowed a this work of the case of the Sometimes also they do this work

he goes along; and a harrow matched to the fame plough, following him close behind, covers them in ... There is no great difficulty in this, the land being in tilth. Over all they put dung; but they hould mind to give it a light covering, that the substance of it might impregnate, with the adjacent earth, which it would not do, but evaporated

by being left exposed to the air. &c. yet this precaution many are very ne-

of this precaution many are very neugligent in.

The other methods, as in the drill, or hillock, or horfe-hoeing way, &c. are little used there except among the more ourious; but they being well known in England, it is needlest to mention them in this place.

The next thing require is the fencing, which should be done, at

fartheft, before the finite begins to ap-pear; for if the cattle, that are in that feafon greedy for fresh vegetables, get at them, the roots of such as they nip will never come to the fize they

rwife would, all

This is well known in Ireland; inability, and partly from a for of careleffnels or rather lazines they fill inheric (notwithstanding the mix-ture of English and Norman brood, dec.) from their Spanish ancestors, are very remise in this respect; especially in the chiltern or more fertile parts of the country; where, in most mat-ters of husbandry, they leave too much to chance, relying on the bounty of the feath. the foilis, mi

" About me, and in many other parts, they very commonly do not put on the first covering till about the mid-dle of May; and the fecond, perhaps, not for a month after; so that it is often July before they fence them properly: and where many of them are concerned in a plantation (as is ufually the way) it is most troubleforme and difficult to get each man to do his part of the ditphing, which commonly is but a forry mound of fods, with fome bushes fodded down on top, to keep out sheep that smell this plant when it rises, (as cartle do coin) and are very

dextrous at getting at its amount of it.

""Some of these poor people are so headless; they never our be brought to make their sences; and then the owner. of the ground; in his own defender is obliged to get feildone at an advan price, and they se pay for it, or their potatoes to remain.

" Many of them, especially in cheap years, leave them on the landlord's ands; and malefs a farmer collects himful, or has a good fervant to do trouble, and fome of in hever no Ness: withstanding

withflanding thefe difficulties many farmers have made eafy fortunes in After it has taken thu, bet signath

"Thus it happens, at the time they are often finishing the fencing, they ought to be weeding their poratoes.—
The weed that mostly annoys them is the Scotch thistle a this fliculd be con away in June, and if the foil should be fo rich as to require a ferond weeding (which is very often the cafe) it should be done in August. There will be no other trouble with them will digging time minus llive sishere mests b

"The best time for this work is in the latter end of October, or beginning of November, to avoid the early frosts, which are mortal to them to but if; by bad hysbandry, they have been plant-ed late, they should be left longer in the ground, and covered with slider, or haulm, to prevent being loft in PREDIAL TITH

44 About Michaelmas, the cattle are let through them, the roots not being then affected by the nipping, or beating down of the stalk : this the peafants know by the colour of it, which becomes a dark brown, long its ver-

dures as also by the appleand, root, for use in August, though they are not then near fo long in ground as they are in England; which demonstrates the excellence and strength of the Irish foil, I MATONIA

When gentlemen farmers dig their potatoes, they fet on a great number of hands at once, two to a ridge boys and girls gather them promiceously, big and little, into bags containing about two Winchester bushels; and thus they are carried to the farm house, and thrown into a room, in one heapy part of which is deftroyed by the froit, a great part by the kitchen, also by the hogs, who deftroy them much whilein the ground, there being hardly any tencing against them; a great part are also stole by the followers; or hang-erston; and the remainder rarely lustices for fred per of fo little value is this eftimable root confidered in those parts : and yet I have often known them at al very high price, from ten to twetty faillings, and upwards, the hig barrel, which is the usual measure in the westcoll stoll mobines and stold stoll most parts of Fingland, where the strate his stoll make a bot it rites through or fixture feet high, with orn parts of Ireland; that is, above

two barrels, for eight buffiels, Win a

Had they fuch places as Covent-Garden near them, the cafe would be far different; but where there are no convenient and brilk markets, the waste in farms is always great.

Though, as I remarked before,

low or fwampy grounds do not answer well for potatoes, yet they fornetimes thrive, and are large, the meat being generally feabby, close, wet, and heavy, from the too great impregnation of the water, which renders them unpalatable, and not the best for seed however, such are chiefly used in this way were here. way yet I have feen them planted in red boys, which are the wettelf and worft; and the bog being previously fanded and dunged, the flaik looked green and healthy, and fome of the roots might perchance have cat dry

but those planted in black, or driet bogs, have been found to succeed well, "There is no dusture perhaps," yet known, will better rectain waste and unprofitable lands, than that of the poratoe, Ireland can well prove t truth of this affertion, in a numberle variety of inflances.

Thave feen feveral tracts of woodland flubbed up, and brought into fine tilth, by means of the potatoe hufban dry. America, T believe, can fay the

of late years the hard hearte fky-farmers; that is, the inferior for and even fome of our gentlemen farmers, drive the poor into the mo tains, mooty grounds, wooded and flony lands; and even into the bogs; and when, by the culture of the satoe principally, they have reclaim them, fo as to be fit to admit cattle, they are turned out without cerein I have in such places feen as fine ero of potatoes, and afterwards' flax different kinds of corn, as ever I met with any where anog

"The mountain and other furfaces, except bog, feldom fail being blefled by nature with limettone, gravet, (which is the commonest) or form other manure, saupted to them; to that this nothing but hands, money, and a proper limitation of the grazing. farming, that are wanting to make algarden, or like England; I need go mes for the creature, and give it in an no higher with the comparison.

"It is true, in some few counties After it has taken this, let the whole

of Ireland, in particular districts, nature either has not been fo bountiful, or the farmers have not found out the internal manures; being obliged to carry fea-fand, and other forts, many miles; in which, however, they find their account, notwithstanding the impolitically too much limited trade

of the kingdom.

" Before I difmis this subject, it may be proper to observe, that a second crop of potatoes is fometimes taken out of the fame land successively; but this is not common, at least about me, though I believe the land is as good as any in the province. On the contrary, the usual way is, after the first crop of potatoes is taken off, if the foil is strong, they immediately sow bere in it, or keep it till the following fpring for flax, which requires an equally fitong foil: or if the ground be but of a middling good fort, they fow it, just after the potatoes are taken out, with wheat; or keep it till the April following for barley.

"The fky-farmer generally takes

the land into his own hands after the first crop of potatoes, and sows it with bere, wheat, or barley, for two or three seasons; after which, if he refreshes it with a summer, or a winter fallow, he fows the fame kinds of grain in it for two or three feafons more; then he takes two or three crops. of oats; and when it is well impo verified, or drawn (as they call it there), he lets it for feveral years together, in con-acres, to the poor people for at least one third more than the

real value,
" From hence we may judge how much an alteration of method in huf-

bandry is wanting in those parts."

POUND, Avoirdupsis, contains fixteen ounces. A pound Troy, twelve

POX. A disorder in hogs. This is a name by which the farmers express a diforder of their swine, that shews itself outwardly in a multitude of pimples and blotches; and keeps the creatures miferable, and makes them pine and wafte.

It rifes from wet and filth in their fties, and from unwholesome food,

The remedy is this: Make a hot

fkin be well cleaned with foap futs. and then wherever the fores and pimples are, use the following ointments Melt over the fire two pounds of hog's lard, and fit in half a pint of tar, When it is taken off the fire, put it as much flower of brimstone as will thicken it when cold into a firm oinsment. Rub this upon the hogen night for four times, and keep his dry and clean, and it will commonly make a cure in that time, to dell'

The farmer must observe, that this disease is infestious; so that he must feparate those hogs which have it from the reft, and not put them together again till they have been fome time well, and he fees there is no return of

PREDIAL TITHES, Are those which are paid of things arifing and growing from the ground only, as corn,

PRICKS in a horse's foot. Whenever this accident happens, we advise the owner to turn his horse immediately to grafs, and to apply nothing external to it. If that cannot be done, only rub on the horfe's hoof fome a day. All tents are pernicious, and all fpirits,

PRICKLY PEAR. SEINDIAN FIG. PRICK MADAM. [Sedum:] Houfe-

leek

PRICKWOOD. [Euosymus.] This grows very common in hedges in different parts of the kingdom, in fome places called Dogwood. The best butchers skewers are made of this wood.

PRIMROSE, [Primula,] This plant grows in hedges and woods in almost every part of the kingdom; if trans-planted into gardens it loses its beantiful pale colour, and becomes reddiffs,

Tree, or Night PRIMROSE! [On thera.] There are feveral species of this plant natives of Virginia and other parts of America, and are propagated

PRIVET. [Ligustrum.] There are two forts. 1. The common, 2. The

Italian Privet.

The first fort grows common in the hedges in most parts of England, where it rifes fifteen or fixteen feet high, with

woody from covered with a smooth grey bank, sending out many lateral branches, garnisted with spear-snaped leaves, ending with obtuse points, and are of a dark green. The flowers are white, and are produced in thick spikes at the end of the branches, haspikes at the end of the branches, having a tubular petal cut at the top in four parts, which spread open. These are succeeded by small, round, black berries, which ripen in the autumn. The leaves of this fort frequently remain green till after Christmas. There are two varieties of this, one with white, and the other bath yellow va-riegated leaves; builto preferre their varieties they should be planted in poor land, for if they are in a rich foil they will grow vigorous, and foon become plain,in

The second fort grows naturally in Italy; this rifes with a stronger stem than the former, the branches are less pliable, and grow more erect; their bark is of a lighter colour, the leaves are much larger, and end in acute points, and are also of a brighter green; shey continue in verdure till they are thrust off by the young leaves in the fpring. The flowers of this are rather larger than those of the common fort, and are feldom succeeded by berries in

this country.

lo Both thefe forts are cultivated in the murferies near London, to turniff the fmall gardens and balconies in the city, the first being one of the few plants which will thrive in the fmoke of London; but although they will live some years in the close part of the town, get they seldom produce flowers after the first year, unless it is in some open places where there is free air.

The Italian Privet is now generally

preferred to the common fort for planting in gardens, the leaves being larger, and continuing green all the year, render it more valuable; and being fo hardy as to refift the greatest cold in this country, it may be planted in any fituation where the common fort

Mack Parvat. [Phillyrea.] There are leven or eight species of Mock Privet, all natives of France, Spain, and Italy, but hardy enough to thrive in the open air of England, except the winters are very fevere. They are all propagated either from feeds or

tayers, but the latter is generally pre-

PRONG, An implement much used in hulbandry, confifting of two or three pieces of iron inferted into a handle for taking up corn, firaw, dung, &c.

PRONO MA. A term used to express an inftrument wied to hoe or break the ground near, and among the roots of

ground near, and among the roots of plants.

The ordinary contrivance of the boe in England is very bad, it being only made for feraping on the furface; but the great use of hosing being to break and open the ground, besides the killing the weeds, which the antients, and many among us, have thought the only use of the hoe, this dull and blume instrument is by no means calculated for the purposes it is to serve.

The prong hose consists of two booked points of fix or seven inches long, and, when stuck into the ground, will stir and remove it the same depth as the plough does, and thus answer both the ends of cutting up the weeds and opening the land. The antient Romans had an instrument of this kind, which they called the bidens; but they were alraid of its use in their singular they were alraid of its use in their fields and gardens, and only used it in their vineyards. The prong-hoe comes into excellent use, even in the horsehoeing hulbandry; in this she hosplough can only come within three or four inches of the rows of corn, turnips, and the like; but this instrument may be used afterwards, and nips, and the like; but this infire ment may be used afterwards, and with it the land may be raised and flirred, even to the very stalk of the plant

PRUNING. Pruning is an operation of the knife performed upon trees, occafionally, in order both to give them any defired form, and to re-trench or reduce irregular and redundant or superfluous growths, or what-

But this operation is particularly necessary to be practifed on many forte of fruit-trees, more especially the dwarf forts, such as all kinds of walt and espalier fruit-trees; it is also neceffary to be performed occasionally upon standard trees, both dwarfs and half and full standards, to all of which proper pruning is necessary; fome forts annually, as all kinds of wall trees,

espallers, and most other dwarf or trained truit-trees; to which it is reentifie in order to preferve the proper figure, and to keep them within their figure, and to keep them within the limited bounds, as well as to promote fruitfulnels; but as to common flandards whole heads flaving full (cope of ards whole heads flaving full from but growth every way, they require but very little pruning, except just to retrench any occasional redundancy, ill-growing branch, and dead awood. Wall trees and espaliers, however, require a general regulation of pruning twice every year, in summer to retrench the evidentia superfluous and trench the evidently fuperfluous and ill-placed shoots of the year, and to train in a supply of the most regular ones; and in winter to give a general regulation both to the supply of young wood left in summer and to the old

For in pruning wall trees and to the old branches, where necessary,

For in pruning wall trees and espatiera, it is to be observed, that as these trees, having their, branches assanged with great regularity to the right and left one above another parallelly, about five or fix inches assunder, forming a regular spread, so as the branches of each tree completely cover a certain each tree completely cover a certain fpace of walling, &c. and as the whole fpicad of branches constantly fund forced of branches contrainty tend forth every year a great number of unnecessary and useles shoets; and each tree being limited to a certain space, an annual pruning is consequently most necessary to retrench the redundancies, and all irregular and bad shoots, to give the proper bearing branches due room, as well as to enable us to confine each tree within its allotted limits, consistent with ire Its allotted limits, confident with its regular form.

The first pruning necessary for fruit-trees is when we attempt to give the head its first regular formation, effeefed by pruning short or heading down in spring all the shoots produced the first year from budding and grafting, that is, the first shoots from the budding, &c. when a year old being generally pruned down in March, within four or five eyes of the bottom, where-by it throws all the fap into the re-maining lower buds, and thus, inftead of running up to one stem, it pushes forth feveral strong shoots from the lower part the enfuing fummer, fo as to fill the allotted space of walling and bottom to the top of the wall or espa-espalier regularly quite from the bot-lier with proper branches, capable of tom; which shoots being trained strait producing a reasonable quantity of

and regular in a spreading mann er, each at full-length all fummers and in winter or principal thous shall feen necessary to form the head more ef tually, prune thore also thefe fhoore each to four or five eyes, and each of of floots the fame year, which according as they advance in length. train at regular diffances at full length during the fummer as before observed; for the shoots of wall trees should never be shortened in the summer fe fon, for ship would cause them to puffr forth many, trifling lateral fronts; though flometimes, in order to fill a vacaticy as food as possible, front young shoots being pinched early in the season, as in May or beginning of June, to four on five eyes, wilbthrow out, feveral proper thouse the fime fummer, repeating however the work of pruning florar occasionally one or two years, &c. as above, either in go neral of to particular floots, as it may feen proper till a proper fee of branches are by that means obtained to give the head of the tree a proper formation (a freewards) pruning f is to be emitted except occasionally to any particular shoot to fill a vacant fpace: but fome forts of well trees require almost a general shortening of their supply of shoots, such as peach, nectarines, &c. twhich bear only o the young wood inhave that of each year shortened, to force out a supply of shoots for suture bearing a other forts of wall-trees and espaliers are not in the general course of pruning to be shortened; such as pears, apples, plums, and chemics, which bear in the old wood from two or three to many years growth.

After the trees are thus furnished with a proper spread of branches trained regularly to the wall and espa-lier, they will every year throw out many more shoots than are wanted, or can be converted to use, by being fome too numerous, others ill place and others of a bad growth, all of which must therefore be regulated ac-cordingly by proper pruning; for as the regular figure of the tree, well furnished in every part equally from the

good fruity are the principal objects of prunings all our operations must

We must therefore be careful to ease the trees of every thing that is differ superfluous, strengthan, or huntful, by pruning twice every year, a summer and a winter pruning. We call that superfluous which, though good and well placed, yet are more than are wanted or each be properly laid in, and that irregular which is for ill placed as it cannot be truined with regularity to the wall or espaller, such as grow immediately from the front or back of the branches in a fore-right direction, which though good of themselves, yet their fination unders them irregular or unfit for training; and we call that hunted which is in itself of bad growth, such as all very rank or siningularly luxuriant rude shoots; so that the superfluous or redundant We must therefore be careful'to eafe that the superfluous or redundant growths should be thinned by pruning growths flould be thinned by pruning out all that fear to cause confusion, and the stregular and hurtful rank shoots should be displaced, cutting every thing of all these forts off quite close to the place from whence they proceed, leaving however a proper supply, more or less, of the regular or best placed side shoots where need fary, to as to preserve every part well surnishes with bearing wood, trained straight and close to the wall or espatiers at equal distances; observing, that some forts of wall trees, we require a general annual supply of young wood, such as peasified all other trees which bear only on the shoots of a year old, other require only an occasional supply of wood, fuch as apples, pears, see, and all other kinds that bear on the old wood from two or three to ten the old wood from two or three to ten or twenty years old or more, fo that the fame branches continuing in bear ing many years; the trees require only a tupple of yourig moots now and then to replace any worn out and dead branches; don't be made at a second

For the mysery of pruning confils in boing well acquainted with the nature of bearing of the different forts of trees, and forming an early judgment of the future event of theory and branches and many other circum-flances, for which fome principal rules may be given; but there are particu-lar inflances which cannot be judged Vote II.

of but upon the foot, and depend chiefly upon practice and observation. The nature or mode of bearing of the different forts of wall and espalier rees, &c. is materially to be confidered

in pruning.

For example: Peaches, nectarines, apricots, &c. all produce their fruit principally upon the young wood of a year old, that is, the fhoots produced this year bear the fruit the year following. this year bear the fruit the year following; and the fame of every year's moots, fo that confequently, in all thefe trees, a general fupply of the best regular shoots of each year must be every where preserved at regular distances quite from the very bottom to the extremity of the tree, on every side in such order as to seem coming up regularly one after another, which should be trained principally at full should be trained principally at full length all fummer; but in winter pruning, a general thortening less or more, according to the firength of the different thoots, is necessary, in order to promote their throwing out more effectually a furnily at the second effectually a lapply of young wood the enfuing lummer, in proper places for training in for next year's bearing, the fruit being generally produced all along their fides, immediately from the eyes, they rarely forming any con-fiderable fruit-fpurs, as in the apple, pear, &c. but the fame shoots both produce the fruit and a supply of

produce the fruit and a fupply of shoots at the same time for the succeeding year's bearing.

Vines also produce their fruit always upon the young wood, shoots of the same year arising from the eyes of the sail year's wood only, and must therefore have a general supply of the sell regular shoots of each year, trained in, which in winter pruning must be shortened to a sew eyes, in order to force out shoots from their lower parts

florrened to a lew eyes, in order to force out shoots from their lower parts only, properly situated to lay in for bearing the following year.

Figs their also only upon the young twood of a year old, and a general supply of it is therefore necessary every year; but these shoots must at no time be shortened unless the ends are time be thortened unless the ends are dead, because they always bear principally towards the extreme part of the thoots, which if thortened would take the bearing or fruitful parts away! Befides, these trees for the general pare naturally throw out a fufficient tupply of thoots every year for future bearing without the precaution of thortening, a stiff to the precaution

And as to apple, pear, plum, and cherry trees, they generally bear prin-cipally on spurs arising in the wood of from two or three to ten or twenty years old, the fame branches and fours continuing bearing a great number of years, so that having once procured a proper set of branches, in the manner already directed, to form a spreading head, no farther supply of wood is wanted than only some occasional shoots now and then to supply the place of any worn-out or dead branch as before hinted; the above-mentioned spurs or fruit-buds are short robust shoots, of from about half an inch to one or two inches long, arifing naturally in these trees, first towards the extreme parts of the branches of two or three years old, and as the branch increases in length the number of fruit-budg increase likewife accordingly; this, therefore de-termines, that in the general course of pruning all these kind of trees, their branches that are trained in for bearing must not be pruned or shortened, but trained at full length; for if they were shortened it would divest them of the very parts where fruit-buds would have first appeared, and instead thereof would throw out a number of strong unnecessary wood shoots, from all the remaining eyes: therefore let all the shoots or branches of these trees be trained principally at sull length, and as they advance, still continue them entire; thus they will all readily form the afore mentioned little fpure or fruit-buds from almost every eye; when indeed there is a vacancy, and there is only one shoot where two or three may be requisite, in this case only pruning or shortening is allowable in these trees, to force out the supply required.

In these trees great care is necessary to preserve all the proper fruit-buds or spurs; which are readily distinguished by their short, thick, robust growth, carely exceeding one or two

inches long.

In the general course of pruning all forts of walk and espalier trees, that when displacing the superstuous and ill-placed woods, &c. always take shem off quite close both in the summer and winter pruning, not leaving

any spurs or stumps of them an inch or two long, as often done, which sills the tree sull of disagreeable stumps, and which pushing out strongly from every eye, crowd the tree with a multitude of unnecessary and irregular shoots, and cause great consustion and obscurity, and exhaust the sap to no purpose, as well as occasion a great deal of labour to retrench them; remember, therefore, that all shoots and branches necessary to be retrenched must be taken off quite close to the place from whence they arise; which in the summer pruning if attended to early, while the shoots are quite young and tender, they may readily be rubbed off quite close with the thumb; but when the shoots become older and woody, as they will not readily break, it must be done with a knise, cutting them as close as possible, and all winter pruning must always be personed with a knise.

It should also generally be observed in pruning in summer, that all the necessary supply of regular shoots that are left for training in should never be shortened during this season, unless to particular shoots to fill a vacancy; for by a general shortening in this season, all the shoots so treated would soon push again vigorously from every eye, and run your trees into a perfect thicket of useless wood; therefore all sorts, whether they require shortening in the winter pruning or not, should in the summer dressing, be layed in at full length.

Two feafons of pruning are requifite for all forts of wall and espalier

summer Pruning.—The summer pruning.

Summer Pruning.—The summer pruning is a most necessary operation; every one must know that in spring and summer, wall and espalier trees abound with a great number of young shoots that require thinning and other reforms to preserve the beauty of the trees and encourage the fruit, and the score it is performed the better; it is therefore advisable to begin this work in May or early in June, and timely disburthen the trees of all evidently redundant or superfluous growth and ill-placed and bad shoots, which may be performed with considerably more expedition and exactness than when after the trees have shot a considerable length and run into consulton and disorder,

fame year's thoots are fufficiently formed to enable you to make a proper choice, and tender enough to require no other infirument than the thumb to displace the bad growths and fu-

However, at any rate, let the work of fummer pruning be began before the trees have to far advanced in fhooting as to cause much confusion, which would cost you a great deal of pains, precaution, and perplexity, to pe-netrate and break through the obscurity to determine what is proper to re-

trench or what to leave.

In this pruning, we observe above, that a great many more shoots arise from all the principal branches than are wanted, or that can possibly be trained with regularity, or that are well placed or proper for the purpose; our business therefore now is to thin our buliness therefore now is to thing and regulate them, by pruning away the superfluous shoots, and all such as are ill-placed and of bad growth as aforefaid; as to superfluous shoots they are to be considered as such when any tree throws out a redundancy of wood, or much more than what is wanted, or that can be trained in; of thefe you must now retrench the most irregular placed, weakeft, and all fuch as are evidently not wanted for use, and ere two or more shoots any where arise from the same eye, clear all away but one of the beft, referving a suffi-ciency of the moderately strong and most regular placed side shoots, and always a leading one at the end of every branch, all of which to be trained in to choose from in the winter pro-ning, leaving more or less in propor-tion, according to what the trees are, or the mode of bearing before hinted; though in all those trees that bear always on the young wood leave rather more shoots at present than what may appear just necessary, especially of peaches, nectarines, apricots, vines, figs, &c., for it is highly requisite to referve regular wood enough in the

chiforder, by their fhoots forming a fummer to choose out of in winter thicket, when it will, in a manner pruning to lay in for next year's bearbe impossible to see what you are a ing; but as to apples, pears, plums, bout, besides the disdovantage of and thereis. See which continue chooking up the fruit behind such a bearing many years on the same thicket of wood and leaves; it is branches, should leave only here and therefore of great importance to perform this operation in the month of lower parts, or in any vacancy till same were a second from the solution of the winter, and if then not wanted they same were a second solution. are easily retrenched. Ill-placed floors being such as either grow directly from the front or back of the branches ftraight foreright, (called foreright floots) or any other ways to ill placed as not to admit of training with regularity, fo must all be out out quite close; and bad or hurtful growth being confidered as any very luxuriant shoots, diffinguished from the others by their rank, vigorous flooting, and are like to prove injurious by drawing all the nouriflment, and impoverifiing the neighbouring ones that are of more moderate growth, should gene-rally be removed, except where any may seem proper to leave to fill a va-cant space, in which it may be pinched early to three or four eyes, when it will furnish you with the like number of more moderate shoots to fill the

Where, however, a tree is in general inclined to luxuriancy, it is proper to retain as many of the regular thoots as can be commodiously trained in with any regularity, in order to divide and exhaust the too abundant sap which causes the luxuriancy; for by humouring fomewhat the natural inclination of luxuriant trees by leaving plenty of branches and these mostly at full length, is the only method by which we can the most readily redu them to a more moderate state of

growth.

Pay particular attention always to the lower parts of your trees, for frequently we shall find proper shoots arifing in places necessary to be trained in, either to supply a present or an apparent future vacancy, or as a reserve parent future vacancy, or as a referve to replace any decayed, or worn-out, or other bad branch, fo that if moderately strong well placed shoots arise in fuch parts, they are particularly to be regarded at this time; and in win-ter pruning fuch of them as are not wanted may be eafily cut off.

All weak triffing shoots should now also be taken out, unless any shall Hh 2

likely to be of fervice hereafter.

Observe in this pruning notes dif-

before described.

After having fummer pruned and cleared any tree from all ufelefa shoots: at above, let all the remaining proper fhoots be directly, or as foon as they are long enough, trained in firaight; and close to the wall or espallers, and all of them at full dength during the fummer feafon, for the reafons before given ; not fhortening any at this time except as before observed, when there is any great vacancy, when pinching to three or four eyes may be proper; but let all the rest be trained at full length till winter pruning, when they must undergo another regulation and fhorten those of fuch trees as require it, as peach, nectarine, &c.

The work of training in the shoots.

in this feafon is, if against walls, both by nailing by means of proper thred and nails, and occasionally by fafning in the fmaller thoots with little flicks or twigs fluck between the main branches and the wall; and for efpaliers tie them with fmall oziers, ruthes,

or bass strings.

Having thus summer dressed and trained your trees, it will be necessary to review them occasionally, in order to reform fuch branches or shoots as may have started from their places or taken a wrong direction, also that according as any fresh irregular shoots produced since the general dressing may be displaced; and likewise as the already trained thoots advance in length or project from the wall or espalier; they should be trained in close, still continuing them at full length during their fummer's growth, for every thing should be kept close and regular all fummer, whereby your trees will appear beautiful to the eye, and the fruit will shew itself and attain its due perfection.

For by thus properly fummer pruning and training wall and espalier trees early in the summer, you pre-serve their regularity and prosperity, and by clearing out all the unnecessary and useless growths, training the rest all requisite advantage from the sun, air, rains, &c. and it will of course attain the greater perfection both in fize, beauty, and flavour. de ode

cat useful to fill a vacancy, or Willer Pruning. In the winter prunity to be of service hereafter, ming, a general regulation must be observed both of the mother branches and the supply of young wood laid in the preceding summer, and the proper time, for this work is any time in open weather from the fall of the leaf in November until March

In performing this work of winter pruning, it is proper to unnail or loofen great part of the branches, par-ticularly of peaches, neckerines, apricots, wines, and fuch other tre require an annual supply of young

First look over the principal or mother branches, and examine if any are worn out or not furnished with parts proper for bearing fruit, actording to the rules before illustrated, with respect to the nature of bearing of the different forts of trees; and let such branches be cut down to the great branch from which they proceed, or to any lower shoot or good branch they may support towards their bot-tom part, leaving these to supply its place; likewife examine if any branches are become too long for the allotted space either at fides or top, and let them be reformed accordingly by shor-tening them down to some lower shoot or branch properly stuated to supply the place, being careful that every branch terminates in a young faoot of fome fort for a leader, and not flumped off at the extremity, as is too often practifed by unfkilful pruners.

From the principal or larger branches pass to the shoots of the year, which were trained up in summer, first cutirregular shoots that may have been omitted in the fummer pruning; likewife all very weak shoots, and those of very luxuriant growth, uples it be necessary to keep some to supply a va-cant place; then of the remaining regular shoots, you are to select a greater or fmaller portion to leave either as a general supply for next year's bearing as in the case for peach, nectarine, apricots, vines, and figs; or only fome occational fluors, dan in apple, pear, plum, and cherry trees to supply the place of any bad or dead

But as peaches, necharines, apricots, vines, and figs, always bear princi pally on the year-old wood as b noticed, naticed, a general fupply of young shoots must be left in every part from hottom so top at regular distances, all of which, except the fig, must be more or lefs shortened according to their fituation and strength to encourage their furnishing more readily a proper supply of shoots in spring and summer for next year's bearing, as before observed, leaving the strongest shoots always the longest, as is more fully explained under each of their respective genera; but as the figs always bear towards the end of the shoots, they must not be shortened.

And with respect to the apples,

And with respect to the apples, pears, plums, cherries, &c. as they continue to bear on the old branches from two or ithree to many years standing, they only require an occardional supply of young wood, according as the branches become unsit for bearing and want removing, so should accordingly train in here and there in proper places some good regular young shoots towards the lower part, to be coming gradually forward to a bearing state, to be ready to replace worn-out and other useless branches; and what shoots are not now wanted for that purpose cut them out close, not leaving any spur or stump, as every one of these, as we before observed, would push out several strong unnecessary shoots the next spring, to the prejudice both of the trees and fruit; have particular regard to preserve the shoots at the termination of all the already trained branches entire, not however suffer more than one shoot to terminate each branch; preserve also carefully all the proper stuit-spurs; likewise observe, that the supply of young wood occassonally reserved, and the branches in general of these trees, should all be trained in at sull length, and continued so in sture, as sar as the similed space will admit; and according as any extend above the wall or espailer, or any where beyond their proper simits, they should be pruned down with discretion to some convenient bud, or lateral shoot, or lower branch, which train also entire.

branch, which train also entire.

In this pruning, as in the summer dreffing, it is of importance, to have a strict eye to the lower parts of wall trees, &c. to see if there is any present vacancy or any that apparently will foon happen, in which cases, if

any good (hoot is fituated contiguous, it should be trained in either at full length, or shorten it to a few eyes to force out two or more shoots if they shall seem necessary; for precaution should ever be observed in taking eare to have betimes a sufficient slock of young wood coming forward to fill up any casual vacancy, and substitute a new set of hyaneses in place of such as are either decayed or stand in need of retrenchment.

of retrenchment, wall trees and espaliers there are many large disagreeable barren spurs, consisting both of
old worn-out fruit spurs, and of clusters of stumps of shortened shoots projecting considerably from the branches, occasioned by unskilful pruning
when retrenching the superabundant
and itregular shoots, which instead
of being cut out close, are stumped
off to an inch or two long, and in
the course of a sew years, forming
numerous barren stumps, as abovesaid, and very little fruit, the tree
appear like a stumped hedge; it is
therefore; in this season of pruning,
advisable to reform them as well as
possible, by cutting all the most disagreeable stumps clean out close to the
branches, leaving these at full length,
especially of apples, pears, &c. as before advised: and referve an occasional supply of young wood in different parts; and thus in two or three
years you may reduce such trees to a
regular sigure and a proper state of

Bad pruning ruins many a good tree, as is observable in numerous gardens, where the wall-trees and efpaliers appear as just above described, pruned every year, yet never produce any tolerable crop of fruit.

The reason is, the operation or art of pruning is much more generally practifed than understood; different pruners have different ideas of pruning; many preceded upon little or more principle, and often prune all trees alike, and their idea of pruning often confile in retrenching annually most of the young shoots, stortening all the branches of every tree without exception, to the great injury of some forts, and retarding their hearing; likewise many pruners in retrouching the superfluous and irregular shoots, instead of cutting alose, as formerly observed.

observed, they often stump them off cies, so as to require but little pru-to about one or two inches long; these ning out of large wood in winter. remaining flumps shoot out again from every eye, and fill the tree with more numerous useless shoots than before, which being also pruned down to flumps of an inch or two long, as above, practifing the same every pruning, fo as in the course of a few years every branch is loaded with clusters of large rugged barren fpurs, formed wholly of the ftumps of shortened shoots, occupying the places where fruit-buds might be expected: It is alfo observable, that many proners think every branch of all forts of wall trees whatfoever must, in the annual pruning, undergo the discipline of the knife, fo shorten all without diftingtion or reluctance, often too with fo much feverity on trees that should not be faortened, as to deftroy the very parts where fruit-buds would have been produced, they thinking this general shortening necessary to strengthen the branches, which, however, in many forts, promotes a too vigorous growth, particularly in trees that produce their fruit on natural fours, forming them-felves gradually all along the fides of the branches, first towards the extreme parts, that shortening not only cuts off these first fruitful parts of the branches, but throws the fap back with fo much vigour to the remaining buds, that instead of forming fruit-spurs, almost every bud pushes out luxuriant shoots, and the trees are continually crouded with unnecessary wood, causing a great annual trouble to retrench it, without the pleasure of having a quarter of a crop of fruit; besides the annually cutting out so much strong wood is very prejudicial to some forts of fruittrees

Too fevere pruning is very prejudi-cial to the health of fome forts of stone fruit-trees in particular, causing them to gum and soon decay.

Plums and cherries in particular are often greatly damaged by a too fe-vere discipline of the knife, these trees being very liable to gum by large amputations; it is therefore of importance to attend to these trees well in the fummer pruning, to retrench all the fuperfluous and irregular shoots betimes in the fummer while quite young, and pinch others occasionally where wood is wanted to fill vacan-

ning out of large wood in winter.

But if our former hints in the fum-

mer and winter pruning are attended to in retrenching the useless wood every year at the time advised; you will always preserve your trees free from all incumbrance and every part will be regularly filled with bearing wood, and their general management will prove eafy.

A general nailing, &c. must every year be performed according as we advance with the pruning.

Therefore it is proper that every tree as foon as pruned be directly nailed to the wall, or if espaliers, tie them to the treilage, observing, that in the winter pruning, as the work of nailing, &c. will require to be performed more or less upon all the branches, we must be careful to train them with great regularity, nailing them along horizontally, as straight and close as possible; never cross any of the branches, but train them diftinct and parallel five or fix inches afunder, as formerly advised, or in proportion to the fize of the leaves and fruit of the different forts, making the opposite branches of each side arrange

equally in the fame position.

Thus far is principally all we have to advance respecting the general mode of pruning wall and espalier trees; particulars for each fort being noticed more fully under their proper genera; but what we have here advanced under this article of pruning is to convey some general hints to unexperienced pruners, though there are many expedients and refources not to be discovered but by repeated practice.

Pruning Standards.
Standard fruit-trees require but very little pruning, for as their branches have full (cope to extend themselves every way, they must not be shor-tened; besides, as our standard fruittrees confift principally of apples, pears, plums, and cherries, thefe, as before faid, bear fruit on natural fours arifing towards the upper parts of the branches, which, as observed in the wallstree and espalier pruning, determines that we must not shorten them, nor practife any other pruning than just to reform any great irregularity, &c.

The first occasional pruning, how-

ever necessary for standard fruit-trees, is the first two years of their growth, in order to form their heads fomewhat regular, by retrenching any irregular shoots, and when defigned to have them form more regular spreading heads, it is customary to prune the first shoots when a year old to four or five eyes, in order to force out lateral thoots from these lower buds the following fummer, to give the head a proper formation. After this, fuffer the branches to take their natural growth, except that, if while the trees are young, any very luxuriant thoots ramble away confiderably from all others, and draw most of the nourishment, it is proper to prune them, either by retrenching entirely very irregular ones, or horten others more or lefs, fo as to cause them to branch out confistent with the requisite form of the head.

But let it be remarked in general, that except in fuch cases of reducing irre-gularities, let the heads of all kinds of standards always branch away as fast as possible, both in length and laterally, agreeable to their natural mode of growing; and they will naturally furnish themselves abundantly with

Observe, however, that as in standand trees of some years growth, irre-gularities and diforder will occasionally happen, which should be regu-lated a little by pruning the most con-spicuously irregular and redundant growths; performing it always in

For inftance: Where any branch grows right across others, or in any aukward direction, to incommode or cause confusion in the head, it should be retrenched close; likewise any branch that rambles considerably from all the rest, should be reduced to order, by cutting it down to some convenient lower branch, fo as to preserve some regularity. Where the head is confiderably crouded with wood, let the worst of the redundancy be thinned out as regularly as possible, cutting them close to their origin; observe likewise where any vigorous shoots arise in the heart of the tree towards the bottom of the old branches, and grow upright and croud the middle of the head, they should be constantly retrenched to their very bottom; cut

out also any very cankered parts, and decayed wood, and clear off all suck-ers from the toot and stem.

Standard trees thus difburthened from any confiderable irregularities and confusion, so as all the proper branches have fell scope to spread free and eafy in their natural manner, they will not fail to repay the trouble in the superior quality of their suture

Pruning Forest-Trees, &c.
With respect to pruning of forest and ornamental trees, flowering shrubs, &c. it is very inconfiderable.

Forest-trees, &c. must be suffered to run up as fast as possible, so their heads must not be shortened; all shat is necessary is, to prune off lateral branches occasionally from the stem, or if while young, any lateral shoot of the head is of a very rude rambling growth, and draws all the nourishment, it is proper to reduce it as you fee convenient; but otherwise suffer the top and all the branches of the head to remain entire, and take their own natural growth; only prune lower stragglers occasionally; observing, however, it is very improper to trim up the stem too high, as often practifed to forest-trees, as scarce to leave any head: never, therefore, trim the stem much higher than the full-fpread of the heed, for a full head is both orna-mental and effentially necessary to the prosperity of the tree.

And as to the shrub kind, they should also, for the general part, take their own growth at top; and only prune occasionally any lower stragglers, from the lower part of the flem, or any very irregular rambling thoos of the head, and all dead wood; but except in these cases, let their heads mostly shoot in their own way, according to their different modes of growth, in which they will appear always the most according

always the most agreeable,

Where, however, it is required to keep shrubs low in any particular compartment, you must regulate this as you shall see convenient, either with a knife or garden-sheers, though knifepruning is the most eligible.

Pruning Implements.
For the purpose of general pruning feveral implements are necessary, such as pruning knives, saws, chissels, hand-bills, haschets, &c.

As to pruning-knives, two draffice different fizes are requilite in order to enable us to prune heatly; a firong one for cutting out larger branches, theore, &c. and a finall one for the more exact pruning among the smaller branches and shoots of peach and rec-tarine-trees, &c. These knives are generally made curving at the point; they should not be too long, broad, or clumfey, but have rather a shortish narrow blade, and but very moderately hooked at the point, for when too crooked they are apt to hang in the wood, and not cut clean it is also proper to be furnished with a fireng thick backed knile, to use by way of a chiffel occasionally, in cutting out any hard Rubborn Rumps, 200 placing the edge on the wood, and with your nating hummer Risks the back of 1e, and it will readily cut through even and finooth.

Pruning hand faws are proper for cutting out any large branch too thick and flubborn for the knies they thould be of moderate fixes, one of which mould be quite finall and warrow, in order to introduce it beca-

row, in order to introduce it occafionally between the forks and the
branches, to cut to exactness.

As faws generally leave the cut
rough, it is proper to fmooth it with
a knife or a pruning chiffel;

Pruning chiffels are necessary to use
occasionally, both to cut off any thick
hard branch or stump, and to smooth
cuts after a faw; they mould be flat. cuts after a faw; they mould be flat, broad; fometimes large ftrong chiffels, fixed on a long pole, are used in pruning or lopping branches from the flems of high flandard forest trees, one man holding the chiffel against the branch, while another with a large maller or beetle fifikes the end of the pole.

A hand-bill and hatchet are also neceffary to use occasionally among larger kinds of the flandard trees.

All these pruning tools in their dif-ferent fizes may be had at the cutlery Thops and ironmongers, also of many of the nursery and seedsmen; and as the expence of the whole will be but trifling, every one should furnish himfelf properly

PUCCOON. [Sanguinaria.] It is a native of most of the northern parts

before the leaves of the trees come out, the furface of the ground is, in many places covered with the flowers. which have fome refemblance to our Wood Anomone, but they have thort naked pedicles, each supporting one flower at the top; Some of these flowers will have ten or twelve petals, for that they appear to have a double range of leaves, which has occasioned their being reimed double flowered The roots of this plant are tuberous, and the whole plant has anythow juice which the Indians use to paint themselves with

This plant is hardy enough to live in the open air in England; but it should be planted in a loofe foil and a flictured frontion, not too much ex-posed to the fun. It is propagated by the roots, which may be taken up and parted every other year; the bell time for doing of this is in September, that the roots may have time to fend out fibres before the hard frost fets in. The flowers of this plant app April, and when they decay, the gre-leaves come out, which will contin till Midfammer, then they decay, a the roots remain inactive till the fo lowing actumb; to that unless the roots are marked, it will be preny difficult to find them, after their its decay, for they are of a direy to colour on the outfide, fo are not fily diffinguifhed from the earth, which "PUCK-BALL," I species of mushroom, full of duft picuously im

PULSE, a term applied to all leguminous plants, as beans, peas, tales, we.

PURGING See Paysics awong PURCING NUT. ScePaysie wow. PURGING PLAX. See FLAX. PURCTUS OTEY GRAINIST See OILY GRAINIO

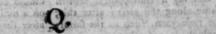
PURSLANE. [Portulaca.] This is a fallad herb propagated from feeds, which may be fown upon beds of light rich earth during any of the funmer months o but if you intend to have it early in the featon, it should be fown upon a hor bed, for it is too tender to be fown in the open air before April, and then it must be in a warm fituation. This feed is very fmall, fo that a little of it will be fufficient to fupply a family. There is no other culture of America, where it grows plenti-fully in the woods; and in the pring, it clear from weeds, and in dry weather to water it two or three times a week. In warm weather this plant will be fit for ofe in fix weeks after fowing; fo that in order to consinue a fuccession of in, you should few it at three or four different feafone, al-lowing a fortnight or three weeks be-tween each fowing, which will be fur-ficient to last the whole former, while it is proper to be eaten; for and then the being of a very cold nature, it is unstate to be eaten, except in the heat of the leaves an furnmer in England; for which reason it is not to any purpose to few it appear a hot-bed, fince it will come hawthorn.

early enough for use in the open air. If the feeds are intended to be faved, a sufficient number of the earlieft plants should be 'eft for this purpole, drawing out all those which are weak, or have small leaves, from among them; and when the steds are ripe, the plants should be cut up, and fpread apon cloths in the fun to dry, and then the feeds may be easily beaten out and fifted, to clear it from the leaves and feed-veiffels.

See Punstane, a species of Orach.

PYRACANTHA. The ever-green

lay a things



QUAKING GRASS. [Graven Maximum.] A large species of grass, rising from fourteen inches to two feet high, with loose panieles, shaken by every wind.

QUARTER. A fourth part. A quantity of corn containing eight bushels, or one-sisten of a load.

False QUARTER. A false quarter is a rest or chink in the quarter of the hoof, from top to bottom; it happens generally on the inside, that hing the weakest and the thinness, and proceeds from the dryness of the hoof, but estimated. weakest and the thinnest, and proceeds from the dryness of the hoof, but efpecially when a horse is ridden in dry, sandy, or stony ground, in hot weather, or in stony weather, when the ways are slinely and hard; It is likewise caused by bad shoeing, and all the other accidents whereby a horse becomes hoof-bound, for the narrowness of the hels and brittleness of the

ness of the heels and brittleness of the quarters continually expose a horse to all the said accidents.

This accident is both dangerous and painful, for as often as a horse sets bis soot to the ground the chink widens, and when he lists it up, the sharp edges of the divided hoof wound the tender fiest that covers the cossin-bone, which is, for the most part, followed with blood, and it must of course be apt to render a horse lame, as it is very difficult to form a re-union.

very difficult to form a re-union.

The usual method taken to remedy Voz. II.

this imperfection is, by outsing off that part of the shoe which lies upon the chink, that it may be wholly uncovered; then with a drawing iron to open the rift to the quick, filling it up in all parts with a rowel of hurds dipt in tuspentine, wax, and sheep's fact, molten together, renewing it every day until the seam is filled up; after it is closed in the top, or upper part, it is usual to draw the place betwick the hoof and the eronet, which, by softening the hoof, and bringing a moisture into it, causes it to grow the faster, and shoot downwards. But there are some who sear the conject above the crack, without piercing the skin just where the hoof begins; and with another iron sear the chink about the middle of the hoof, which succeeds very well, if care be taken to keep the hoof moist with applications of tar, honey, and grease. Some pour aqua-fortis into the rift when the pain is violent, to deaden the part, making a border of wax on each side to him, der it from spoiling the rest of the hoof; and there are others who prepare a stat piece of wood about an soof; and there are others who pre-pare a flat piece of wood about an inch in breadth, but at the fame time fo flender, that it will bend like a hoop, and of a fufficient length to go twice round the hoof; and having first drawn the whole length of the cleft, they apply turpentine, pitch, and suet,

molten together, to the fore, and faf-ten the hoof with pieces of lift or fil-This is a contrivance to anleting. fwer instead of bandage, to keep the chink united, and to prevent it from jarring when the foot is moved, which is, indeed, very reasonable, for the least motion will be apt to discompose the tender substance that grows up in the cleft, and cause imposshumation, which will again open the hoof. But I am of opinion, instead of this troublesome way, rhe following method

will be found more easy and successful: First, draw the whole length of the eleft gently with your drawing iron, then anoint the hoof with tar, honey, and fuet, molten together as directed for nothing can be more proper for the hoof, and lay a thin pledgit dipt in the same along the cleft; after this, take of rope-yarn, fuch as the failors use, which is no other than hemp moiftened in melted pitch and tar, and spun loose; apply the yarn all down the hoof, beginning at the cronet, and descend downwards, one lay after another, as close as the binding of the hoops of wine-casks, laying a fmooth pledgit of flax behind, to keep it from fretting the heel. This should be opened once in three or four days, that the cleft may be dreft; and to prevent any inconveniency that can happen by the opening, a thin staple inay be also contrived with points like horse-shoe nails, cast off obliquely, to take a slender hold, the plate of it croffing the cleft where part of the shoe is cut off, and the nails coming out on each fide the cleft on the upper part, to be rivetted as the other nails, By this method a cleft in any part of the hoof may easily be cured, if the horse be not very old and diseased.

QUEEN of the Meadows. See Mea-

dow-fweet.

QUICK, or Quickfet Hedge, A general name for all hedges, of whatever forts of plants they are composed, to distinguish them from dead hedges; but, in a more confined fense of the word, it is applied to the white or hawthorn, the fets or young plants of which are raifed by the nursery gardeners for fale.

QUICKBEAM. See SERVICE. QUINCUNX, A disposition of trees originally formed into a fquare, con-

fifting of five trees, one at each corner, and a fifth in the middle; which difposition often repeated forms a regular grove, and then viewed by an angle of the square or parallelogram, represents

equal and parallel alleys.

QUINCE-TREE. [Cydenia.] The fpecies are, 1. The Pear Quince. 2. The Apple Quince. 3. The Portugal Quince. And 4. The eatable Quince.

All the forts are eafily propagated either by layers, fuckers, or cuttings, which must be planted in a moist soil. Those raised from suckers are seldom fo well rooted as those which are obtained from cuttings or layers, and are fubject to produce fuckers again in greater plenty, which is not fo proper for fruit-bearing trees. The cuttings should be planted early in the autumn on a moist border. The second year after they should be removed into a nurfery at three feet diftance row from row, and one foot afunder in the rows, where they must be managed as was directed for Apples. In two years time these trees will be fit to transplant, where they are to remain for good, which should be either by the side of a ditch, river, or some other moist place, where they will produce a greater plenty, and much larger fruit than in a dry foil; though those in the dry foil will be better tasted, and earlier ripe. The trees require very little pruning; the chief thing to be ob-ferved is, to keep their stems clear from suckers, and cut off such branches as crofs each other; likewife all upright luxuriant thoots from the middle of the tree should be taken entirely out, that the head may not be too much crouded with wood, which is of ill confequence to all forts of fruit-trees. If they are propagated by budding, or grafting upon stocks raised by cuttings, to multiply the best forts, the trees so raised will bear fruit much fooner and be more fruitful, than those which come from suckers or layers.

Quince flocks are also in great esteem for to graft and bud pears on, which on a moist foil will greatly improve some forts, especially those designed for walls and espaliers: for the trees upon these stocks do not shoot so vigoroufly as those upon free stocks, and therefore may be kept in less compass, and are sooner disposed to bear fruit : but hard winter fruits do not fucceed fo well upon these stocks, their fruit being very subject to crack, and are commonly stony, especially all the breaking pears, but more especially if they are planted in dry ground; therefore these stocks are only proper for the melting pears, and for a moist foil. The best flocks are those which are raifed from cuttings or layers.

QUIT-RENT, a small rent payable by the tenants of most manors, where by the tenant is quit or free from all other services, and is faid to be an acknowledgment of their subjection to

the lord of the manor.

QUITTOR, an ulcer formed bethe infide quarter of a horse's soot; it often arifes from treads and bruifes, fometimes from gravel, which by work-ing its way upwards, lodges about the coronet: if it is only superficial, it may be cured with cleaning dreffings, bathing the coronet every day with spirit of wine, and dreffing the fore with precipitate medicine.

But if the matter forms itself a lodgment under the hoof, there is no way then to come at the ulcer, but by taking off part of the hoof; and if this

teams open a recise and the highligh

the sound time to the second

be done artfully and well, the cure may be effected without danger.

When the matter happens to be lodged near the quarter, the farrier is fornetimes obliged to take off the quarter of the hoof, and the cure is then for the most part but palliative; for when the quarter grows up it leaves a pretty large feam, which weakens the foot: This is what is called a falfo quarter, and a horse with this defect

and the similandence like the

feldom gets quite found.

If the matter, by its confinement, has rotted the coffin bone, which is of fo foft and fpongy a nature, that it foon becomes fo, you must enlarge the opening, cut away the rotten flesh, and apply the actual cautery, or hot iron pointed pyramidically, and drefs the bone with doffils of lint, dipped in tincture of myrrh, and the wo with the green, or precipitate oint-ment. When the fore is not enlarged by the knife, which is the best, and leaft painful method, pieces of fubli-mate are generally applied, which bring out with them cores, or lumps of fiesh: Blue vitriol powdered, and mixed with a few drops of the oil, is used also for this purpose, and is said to act as effectually, and with less pain and danger.

MINER BY STATE OF STREET AT att "map the ball of the min start we get tree Refree on the others of them. ad at several we alterdary there is

engal men enne son vigeli ere nje vesi, elkopsii sistem, panele ocher, en en en Kepti mener sindle ense per sienjis säären konstrukti hat janele

R ABRIT. The rabbit is a small animal, and may appear of small consequence to the farmer who breeds ether animals of more profit, yet this is very well worth his regarding as a part of his flock. It has the recommendation of the goat, that it will thrive where nothing elfe can live; and the fame advantage as the hog, in

a is finished way contained and the

the great increase by young.

Both the buck and doe rabbit are eager for copulation, and they must not be restrained. The does go but a month with young; and as foon as they have brought forth they are

run wild they get together in a very little time; and when they are kept tame and feparate, they must be put together foon after the bringing forth, otherwise the doe grows fullen, and will take little or no care of her young

The rabbit is diftinguished into two kinds, the wild and the tame. These are kept in a diftinct manner; the wild running loofe, and burrowing themselves holes in the ground, and the tame being kept in houses, huts, or boxes.

Both kinds yield a very large profit, teady to copulate again. When they though under different managen

The wild rabbit breeds fall and freely in warrens, or other places where there is room and a free air. They will thrive upon the poorest, and bar-renest, gravelly, stony, or sandy soils; by stony we mean such as are sull of small stones, not the rosky, for in these last they cannot burrow. In these fort of grounds the farmer will find great advantage from the breed-ing of rabbits, either altogether or occasionally; for in the latter way they improve thefe barren lands extremely by their dung and urine, and render the work of them fit for raising good crops of rye; and such as are but a little better, for the other kinds of corn.

The diffinction between wild and tame rabbits is not founded in nature, but on our own practice; for the wild kinds may be as well kept tame as the others. They are used to a kind of imprifonment in their holes, and for that reason they bear confinement better than most other creatures.

As to the wild kind there is properly but one breed of them, and all the direction that is needful in the choice is, that such as are taken to begin a stock, be large and big bodied, with a good deep fur that hangs fast upon their backs, and with flout limbs. The hufbandman that has wafte ground in his hands, that is fenced well, and not with live hedges, should never omit this part of his stock, for the very worst of his ground will do, and the advantage he received from them will be very great.

A fmall number is fufficient to be first turned in; for of all creatures

Experience shews that the wild rabbit fucceeds better in forme places than others; the young growing up much quicker, and the flesh being finer and better tasted. The reason of this is to be fearched in the foil and the produce; and this may teach the hul-bandman on which of fuch grounds as feem proper, it will be most to his benefit to breed them.

In general, the fhorter and feantier

much water, they never are well-fla-

Of all creatures, water is the leaft necessary to a rabbit, for we see the tame ones will live very well altogether without it, on moist sood. Where the soil is driest, the air finesh, and the water that there is in the way is running and clear, there the rabbits may reasonably be expected to succeed best. Damp grounds, and standing waters, being the greatest disadvantage

to this creature.

The common rabbit will very freely be kept tame; for it has been found, many years fince, that those which we usually understand as tame rabbits, will live very well wild, efpe-cially the hardier kinds. This is a confideration of fome confequence, because there is one of the tame kinds that is, in every respect, better than the common wild one. This is that which is known by the name of the filver-hair-ed rabbit. It will live and thrive as well wild as the common fort; and it is always better tafted and fairer tothe eye, fo that it brings a larger price. The fkin also is of much more value, and the demand for it among the fur-

riers is confrant and certain.

For these reasons it is, in many cases, advisable to breed this kind wild instead of the other: but though it often is fo, it is not always. This, though as hardy as the other, requires a better supply of food, and is poor, and of little value upon those barren and heathy lands, on which the com-mon wild rabbit fueceeds very well.

The proper place for this kind is a park, where they may run at liberty among the deer and other cathle, and where there is good grafs, though not rank, upon the ground; the other is the proper kind for the miferablest and poorest lands.

Tame ratibits are diffinguished into feveral kinds, according to their co-lours and other accidental diffinctions; but the differences are not great, nor is there any material point of profit attending the choice of one or the other fort.

The filver-haired rabbit laft-named the grafs, the better is the tafte of the is a very good and profitable kind to rabbit. The driet the ground the be kept tame, because of the advan-better they facced; where there is tage of the flein. The Dutch rabbit is

a much larger kind, and is very good for the table, but the fkin is of less The most beautiful, when value. kept cleanly, is the white long-haired rabbit; this is, by fome, called the Turkey rabbit, from the place from whence we first had it; and by others the Shagge rabbit, from the length of its hair. This is a very good kind to breed tame also, but if not kept very clean, it is subject to a disorder not unlike what the doctors call the Plica Polonica; the hair growing together in clots and cakes, and this often in fuch a manner, that blood veffels from the fkin run up amongst the clots, and they will bleed on being cut off.

It is not very material which of thefe, or of the feveral other kinds that it is the custom to breed at this time, the farmer chooses; for with proper management, any of them will turn to very good account; but which-ever fort it be, let him take a more flrict and critical care in the choice, than he has been directed to do in those which are to run wild, for a great deal more depends upon it in this kind, than in those. The skin here is of much confequence, and the distinctions in this are nice, and never enough to be regarded in the choice

In the filver-haired rabbit, for inflance, let the hufbandman take care to choose his buck of the true kind and co'ur, for on this, more than on the doe, will depend the value of the breed. Let the fur be thick, deep, fmooth, and gloffy; and let the ground colour be black, with a moderate quantity of white or filvery hair. It is proper to choose them rather too dark for breeding, because the colour in the young is more apt to grow paler than deeper; and a filver fkin that is too dark, always will bring a better price than one that is too light.

In the fame manner let the fur of the feveral other kinds be examined, when they are chosen for breeding; for the rest of the directions already given for the choice of the wild, hold good here; the largest and best shaped being to be fixed upon. In the same manner as these rabbits were first chofen, let them be picked out from time to time for keeping, to preferve the

breed; for upon this will depend a

great part of the advantage.

The farmer having thus felected his flock of these little animals, is to take his choice of the several methods which are in use for the breeding and keeping of them. These are many, and among them some allow more and some less liberty to the animal; in general, fuch as allow most freeare best; for though the rabbit will bear confinement very well, yet it will thrive best where that is least

Cleanline's also is a very great arti cle in the breeding of thefe, as well as other creatures, and where the con-finement is least strict, there is natu-rally least foulness. The dung and rally least foulness. The dung and urine of the rabbit have a very dif-greeable and rank smelt; and no-thing prejudices the creature more than being keps nasty with these about it.

The general way of keeping tame rabbits is in a kind of boxes made for this purpose: others keep them in pits; but it would be a much better way to keep them in buildings made for that purpose. This might be done at a small expence, and would answer very well; for it would be cleanlier and more wholesome than any other way. The boxes are too fmall, and therefore are apt to grow nafty, and the pits are liable to be damp, which, as we have observed already, is one of the worst things that can happen in a place where rabbits are to bread. The boxes, for such as prefer them, should be made of thin wainsoot, and

divided into larger and smaller rooms, two for each rabbit. One of these should be for eating, and the other for lodging and bringing forth the young. That for eating flould be the larger, and should have a grate before it for light, and the snader should be entirely dark. Before both there must be placed a trough with the food; and thus the creature will live, thrive, breed, and fatten: But there wants free air, and it is very difficult to keep them cleanly, fo that although this method may do, the others are fure to answer better, when abey are managed properly.

Those

Those who use this method by boxes, fet them one above another, in so many stories; and keep the bucks by themselves, and the does by themselves, unless it be such does as have not bred, and with those they lodge a buck in the same box. The common size of these boxes is two feet long; the same in breadth, and a foot high. It is surprising to see so large a creature as a rabbit live so well as it does in this small compass, but it will always do better when it has more room.

The method of keeping them in pits is preferable, and is thus. A dry foil is to be fixed upon for this purpole, and the pit is to be dug feven foot deep, and of a bigness proportioned to the number intended to be kept in it. This must be walled up on the Infide, only leaving spaces for them to make their burrows. A fandy foil, not too destitute of other earth, will answer for the purpose of these pits better than any other. At one end an hollow place is to be made for the buck to rest in, he must be chained to a stump, and have room only to go to the rack where the food is placed in these pits, and thence to his den to rest. At the other parts of the pit, out of the reach of the buck, are to be the places left for the does to make their flops or burrows. The rack is to be placed near the middle of the pit, between the bucks and does, he being on one fide by himself, and they on the other.

Three does may very well be kept in the fame pit with one buck, and the pit for this purpose should be about ten foot square. Some make them larger, and keep more bucks than one, but it is a better practice to make more of them, only allowing one buck and two or three does to each.

This will naturally appear to those who are not acquainted with these things, a large provision for three or four rabbits, and a great expense for so sew small animals; but those who have kept these creatures know that it very well answers the expense. Provided the pit be dry they live more comfortably by much in it, than in the other way of boxes; and the produce is so great that one buck and three does will bring a hundred and

fifty; two hundred, or more young ones in a year.

The young are to be left under the care of the dam till they are about a month old, and they are then to be taken from her either for fale or the table; or if there be no demand either of these ways for them, they must be put into some pit, or other place made for that purpose.

The same practice is to be observed in removing the young, if they are kept in boxes, or whatever other way. In whatever manner the old ones are kept, when they have brought forth a fecond brood, the first is to be taken away, and reared up elsewhere. The common way in this case is, to remove them to other boxes, keeping those of several broods of about the same age together; and thus they are to be treated in the other way, either rearing them in another pit, or in any manner that is convenient, only allowing them some form room and air, the more of both the better.

The reason of chaining up the bucker abbit in the pit, and of keeping him in a separate box in the other way, is his mischievous disposition, for he will kill all the young ones. This the does are themselves so sensible of, that they in their natural wild life, hide the young ones, and close up their holes, that the buck may not find them.

The two great requisites in these pits are warmth and dryness; their depth, unless the ground be very savourable, making them subject both to damp and cold, in either of which cases the rabbits will not breed well.

The most profitable time of their breeding is in the depth of winter; and they will never breed at this seafon, at least not successfully, unless they be kept dry and warm.

It is from the danger of the cold and damp in pits, and because of the want of air in boxes, som have been led to think of such other methods as may give rabbits the advantage of both in a fit degree, and yet keep them in such an easy and ready way, that they may be always at hand, easily fed, tended, and looked after, in every respect, and yet have warmth and freedom.

To obtain these several advantages, by means of which tame rabbits of the best kinds would be kept in the greatest perfection of health and beauty, and to the greatest advantage of breeding, let the husbandman erect a

building purposely for them.

Having chosen his rabbits for breed, let him fix upon a proper spot of ground for his edifice, and draw the plan of it of fuch extent as to contain conveniently the number he shall think proper to keep. Let the soil on which he builds this

place, be of a dry loamy kind, with a large proportion of fand in it; for this is the fort of earth the rabbit loves best, and in which it is always most

healthy,

Let the building be square, and run
up of wood in a slight but yet in a
up of wood in a slight but yet in a tight manner; and let there be a kind of closet carried up at one end, In each corner of this square let

there be a den made for a buck rabbit, and a small post driven in, to which fasten him by a chain, in the same manner as in the pic. At some small distance from the corners let there be racks fet up for food, which shall be within reach of the bucks, and one or

two others in the middle.

When the house is thus prepared, let the bucks be chained in their places, and the does turned in. They will all live much more comfortably in this house than in the pits; and at the times of taking away their young, let them be put into the smaller rooms or closets, prepared for that purpose, where they will thrive and live very comfortably. A building of this kind will cost little, and the profit arising from the rabbits will be much greater than in any other way, because they will breed freely throughout the win-ter; and neither the old nor the young will be subject to diseases. Both the old and the young will be, in this manner alfo, defended better against vermin than by any other way whatfoever.

The feeding of the rabbit is an article of great confequence with regard to its health and increase, and it is less understood than most things of the like kind. Some feed them in a manner entirely with wet meat, others almost altogether with dry: Now, and those who commonly keep them both these methods are wrong. A upon fresh and moist food, as many mixture, or diversity of food, keeps do, giving them carrots and other

them better in health and vigour, and occasions their breeding faster, and

occasions their breeding fatter, and more fuccefsfully than any other kind.

The dry meat of the sabbit is hay, oats, and bran. Their moift or wet food is fresh herbage, or roots, of almost any kind, which they will eat with the greatest eagerness, as coleworts, parsley, and others, from the gardens; and sow-thistles, mallows, and the like from the fields. Now gardens; and fow-thiftles, mallows, and the like, from the fields. Now, these the husbandman should give them interchangeably; always ob-ferving this caution, that when he gives his rabbits dry meat, he must fet them water; and that when they have the fresh or moist meat, they have no occasion for any; the juices of those leaves and herbs supplying them with a sufficient humidity

It is a common custom with many to cut up the fresh food for their rabbits from under an hedge, taking every kind of herb that offers, so it be young, and the rabbits will eat almost any; but in this some caution is necessary, for the herb hemlock is very common under hedges, and it is poisonous; the rabbit will eat it gree-dily, but it dies by the effect.

The hay that is given to rabbits must be the finelt, sweetest, and shortest, that can be got. Nor let any one grudge the expence, for they eat but little, fo that the amount is scarce

worth confideration.

This is the best and healthiest food of all others for rabbits, and fhould be their ftandard diet, but about once in five days they should have the fresh herbs, which cool and fcoun them. And by this management they will be kept healthful and vigorous; always ready for breeding, and their young will be lufty, firong, and thriving.

Among the other food of the rab-

bit should be mentioned grains; this is of a middle nature between the moift and dry food, and is a very cheap diet; but it is not wholesome, and is therefore dearer in the end. The rabbits will feem to thrive upon it, but there is no food whatfoever that makes them to liable to difeases,

In general, the advantage of their dry meat is, that it prevents diseases; roots among it, would do well to change it for dry meat in wet weather; for moift food is the great cause of

for most food is the great caule of these creatures having the rot, and they are most of all subject to this in damp seasons.

RACK. A wooden frame made to hold hay or fodder for cattle.

RADIATED Flowers, such as have several semi-floscules round a disk, in form of a radiant star: those which have no such cays, are called discoustioners.

RADICLE, that part of the feeds of plants which upon vegetating becomes its root, and is discoverable

by the microscope.

RADISH, the name of a well-known vegetable, and which is commonly cultivated in the kitchen-garden for

Radishes are fown in different feafons, according to the time when they are defired for use. Those fown in September will be fit to eat at Chriftmas, if they are not destroyed by frost : but they must be used whill very young, for they foon grow hot and tlicky. If fown towards the end of October, which is commonly the time of fowing for the earliest crops, they will be fit for the table in the beginning of March. Those fown at Christmas, if the feafon is mild, and the ground in good ordet, will, if they escape the frost, he fit for eating about the end of March or beginning of April; and by continuing the fawing once in a formight, from the middle of January till the beginning of April, always observing to fow the earliest crop in the warmest and best sheltered fituations, and the later ones in a moist foil and open fituation, with-out which they will run up, and grow flicky, before they are fit for use, a re-gular succession of these roots may be had throughout the season. The ten-derest, and mildest to the tass, are those which have been raised in deep, sich, and light mould.

When the radiffies are come up, and have got five or fix leaves, they must be thinped wherever they stand too close; for otherwise they will run up in tops, and not increase in their roots. Some thin them by hand; but it is much better to use a small hoe, which will flir the ground, destroy the weeds,

and promote the growth of the young plants. They may be left about three inches afunder, if they are intended for drawing up fmall; but fix inches will be fittle enough, if they are to

And till they are pretty large.

The kitchen gardeners about London, who pay great prices for their ground, and therefore are obliged to make it produce as many crops as pos-fible in the year, fow carrot-feed with their early radifles, in order that if the radifles are killed foon after their coming up, as they fometimes are, the carrots may remain; for the feeds of these last generally he in the ground five or fix weeks before they grow, while those of the radishes sprout in about a fortnight; hat when both crops succeed, the radishes must be pulled up while very young, or they will weaken the carrots; so that these last will not be able to support them-

felves after the former are gone.

It is also the constant practice of these industrious and intelligent men, to fow fpinach with their latter crop of radifies; for after the radifies are taken off, and the ground has been cleared between the plants of spinach, these last will grow up so prodigiously as to cover the whole space in a fortain of the spinach of the spinach. night's time; and if this (plnach is of

night's time; and if this ipinach is of the broad-leaved kind, it will be larger and fairer than it usually is when fown alone; because most people are apt to fow it too thick, when they do not mix it with any other crop.

The small topped, the deep red, the scarlet, and the long topped striped radish, are the varieties generally cultivated in kitchen gardens. The small topped is most commonly preferred, because it takes up the least room; but a small spot of ground will surnish, from each sowing, as many radishes of any kind as can be spent in a family while they are good.

The Naples radill, which has a very white, round, (mall, and fweet root, may be propagated in the fame manner as the common fort, excepting that it should not be fown till the beginning of March, and the plants should be allowed a greater distance. It is not very common in this country, and, indeed, its seeds are apt to degenerate here

The white and the black Spanish

radifies will be fit for the table by the end of August, or the beginning of September, if they are fown about the middle of July, or a little earlier, and middle of July, or a little earlier, and will continue good till the froit spoils them. These should be thinned to a much greater distance than any other fort; for their roots, will grow as hig as common turnips. If they are drawn out of the ground, before a hard frost comes on, and laid up in dry land, in the same manner as is practised for carrots, they will keep good all the winter.

To face the feeds of radifies, fome of the kraitell and belt-coloured roots should be planted in rows three feet afunder, and at the diffance of two feet from each other in the rows, in deep and well dug ground. If the feafon is dry, they must be watered from time to sime till they have taken root, after which they require no further care but keeping them clear from weeds; nor need these be feared after the branching seed-stalks of the radishes have overspread the ground, as they will soon do, in such a manner as to prevent their farther growth.

In this transplanting of the radishes, an allowance should always be made for bad seasons, because the very same plants will not yield a fourth part of feet from each other in the rows, in

plants will not yield a fourth part of

the quantity of feeds in dry feafons, that they would do in a most feafon, When she feed begins to ripen, it should be carefully guarded from birds, and when it is ripe (which is known by the pods turning brown) it should be cut, dried in the fun, threshed out, and laid up in a place where mice

caenot come at it.

Horse-Radiss. See House-Radis.

RAGS. Woollen rags, and the
nippings of the pitch-marks upon
sheep, are a singularly good manure.

The rags should be chopped small, about an inch or two fquare, and foatbout an inon or two lquare, and loat-tered on the earth at the second plough-ing; for being thereby covered, they will begin to rot by seed-time. They imbibe the meisture of dews and rain, retain it long, and, as Dr. Home ob-serves, thereby keep loofe foils in a moist state. They cost about four-pence a bushel at London, from whence many loads are fent every year to Dun-flable, which is thirty-three miles, where they are laid even on ftiff lands, Vol. II. just after the sowing of the corn, allowing to the acre sour facks of fix bushels each.

bushels each.

RAGWORT, [Otherms.] or, as it is called in Yorkshire, Seagrim, is a very pernicious weed.

The Rey. Mr. Camber, of East-Newton, has obliged the public with the following observations on the growth and destruction of the

Newton, has opuged the public with the following observations on the growth and destruction of ragwort, or seagrim.

"This plant," Tays he, "has a stalk, in its early state, green; but, as it advances in age, inclining to violet, or pumple, especially downwards. Its stowers are both yellow, and thick-set, and composed each of a number of small-pointed leaves. It runs to seed in the latter end of summer. The smell, both of the stalk and leaves, which are jagged, (whence probably it obtains one name) and the slower intest, are offensive to all animals, I think; for I have observed that hardly any creatures seed upon it, except almost hungered or starved. Thave not indeed observed whether or no assessment to the second of the second observed whether or no assessments.

most hungered or starved. I have not indeed observed whether or no affes reject it.

"Lake most other weeds, it thrives best in the best soils, either natural or artificial; and I took up a plant of it in my orchard, about two years ago, (wish the root) which, when in stower, touched my chin, my height is about five seet eight or nine inches) and its root, which is round, and thick set with taws, was much larger than a new-born child's head; but the usual dimensions are much less than these.

"About four years ago, I observed the spreading of this weed in that part of this oftate which was so our own hands. I took notice, that neither cows nor horses eat it; and when I smelled it, I ceased to wonder that they did not. It was obvious to remark, that a weed so bulky as this, and so gols, must extract much nourishment, from the earth, and that is was advisable to get rid of it as fast as a possible. The most easy method was mowing. I therefore ordered a servant to mow these weeds in the passures as near to the ground as he could: and I heped that the common mowing in the meadows would be sufficient to destroy them: but I soon found my mistake, for in a very sew weeks these offensive strangers

rs thot up again into a stalk and gers thor up again included all in leaf, and even flower, though all in much smaller size than before, but with this difagreeable circumstance, that the root was fo far from being injured with the fcythe, that for one stalk several arose, and the root seemed to have gained new vigour from the

I now applied myfelf to plucking up by the roots these odious in-mates, and found new difficulties; for while the ground was dry, as it usually is in the latter end of furnmer, I found the stalks of such of the seagrims as were longest, and afforded the tightest grasp, either break in plucking, and leave the root in the ground entirely, or at best bring with it only a small part of the root; and when the wet weather came on, and loofened the ground, and made it poffible, or even easy, to bring away the whole ball of the root, yet the feason of feeding was come on alfo, and the earliest ripe feeds had dispersed themfelves, and produced an affurance of a larger crop for succeeding years than the most careful plucking of the pre-fent crop could destroy.

"But it these were the difficulties

which attended my attempts to eradicate thole feagrims, which had hap-pened not to be mowed, I was much more embarraffed by those which had been; for here it was impossible to get any fuch fast hold, as to pluck them

up with much, or even any root.
"I now applied myself to enquire what gentlemen or farmers were plagued with this weed, and what methods they had tried with fuccefs

to destroy it,

" I was told by a gentleman in my own neighbourhood, that Sir G. Caybart, of Brompton, near Scarbo

rough, had been plagued with this weed, and had purited the method of plucking with fuccess.

"Animated by this affurance, I resolved to pursue this method with great attention; and as it seemed to be a work which required great care, both in the choice of season and man-ner of plucking, I resolved not to de-pute the work to others, but to endeavour to clear a spot in my cow-pasture with my own hands, that, if my labour succeeded, I might employ others to follow the fame method under my own eye in the rest of this

pasture.

"Accordingly, in the evenings of the fummer, or rather autumn, of 1762, after showers, I applied myself to this work; and by the help of a pair of strong gloves, and a tight grasp, I brought up almost every root, in a space of about two hundred yards square, whole; so that I had good hopes I should see this spot clear in the succeeding summer. It is true the fuceeding fummer. It is true, I faw leaves of the species of this weed, and of a very vivid green too, around the plants which I pulled up; but as I reasonably concluded these to be fed by the taws which spread themfelves from the main root, fo I (me-thought reasonably) concluded also, that this main root being destroyed, the fide taws would die, and confe-

quently these young leaves.

But how was I disappointed, when, in the summer of 1763, I saw this spot of ground as much over-run with feagrims as any part elfe of the pafture which had been unpulled !

"Conversing, however, with G. Watfon, esq; of New Malton, to-wards the latter end of fummer, on this subject, I was affored by him, that by a repetition of this labour of plucking for fome years, he thought he had leffened the number of his feagrims, though they were fill numerous. Urged by this example, I had gone through the whole of my pasture, which is about ten acres, and keeps five cows, at the latter end of last fummer, of 1763, with the same care as was used to a fmall part of it in 1762; yet am I not elated with much hope of fuccess; for a little plot before my garden (in which my horses run, and which was managed with still more accuracy on account of the odious appearance of the feagrims from my windows) feems to threaten another confiderable crop.

" As I did not confine my enquiries about the method of destroying this hateful weed to any one rank of men, I was told by an honest quaker, a farmer in my neighbourhood, that he had found turning of sheep in winter into his cow-pasture the only effec-tual method of destroying this hateful

" I thought

" I thought this method very likely to succeed: for sheep are such close eaters, that I have known them deitroy whole beds of the rankeft docks, which could not be killed by any other

means.

" I have not been able to try this experiment confiderably; for, as I am raising quick sences, both in my meadow and pasture, I keep no sheep. I have, however, occasionally admitted fome of my tenants theep into the fmall plot before my garden this winter; and, upon an accurate examina-tion this morning, I do not entertain any fanguine hopes of great fuccefs from this method. I find that many of the young leaves of this weed, now level with the furface of the ground, are untouched by the fleep; and that fuch others as appear bitten by them, do not feem in a dying condition.
"The truth feems to me, that

sheep, though they may not have the fame aversion to this weed as horses and cows, yet are far from being fond of it; and if any great success is to be hoped for from their bite, (which may prepare beds for the water, and fo decay the root) the sheep should be folded pretty close upon it, and obliged to eat it near, and at such a season that the winter-rains may have time to work its destruction. And such a method, if carefully purfued, feems to be most probable for the extirpation of this pernicious weed.

" If the method of plucking is followed, I would subjoin some cautions:

"First, In order to prevent the large plants from feeding, I would advife to cut off all the tops, and the tops only, when the flowers begin to die, that then good hold of the ftalk

may be gotten.
"Secondly, I would defer the pluck-ing till the rains have moistened the ground sufficiently to bring up the

whole main root.

"Thirdly, I recommend firiking the root so brought up against the ground, in order to disperse the earth which adheres to it, by way of manure.

"Fourthly, I always pile the plants thus pulled up and cleanfed from the earth, that, if the season proves favourable, they may be burnt, and the ashes arising from them spread on the ground; or if this cannot be conveniently done, (though it is much the better method, and may, with a suf-ficient fire, be done when they are ever fo green) they may be left to rot and manure the foil.

" The groffness, and even stench, of this weed, is a proof of the great quantity of falts it contains; and in the fame proportion as any plant exhaufts the ground of its falts it repays when reduced to manure. There can, however, be no question, but whilst weeds are left to rot, a great quantity of the falts, which by burning would mingle with the foil, are carried into the air.

"I suppose your readers will be curious to know in what manner I account for the fudden appearance of these feagrims in vast abundance, in this estate, where they were hardly ever known before.

" I will give you an account, which I date fay, you will efteem perfectly fatisfactory. About eight years ago I undertook to improve a piece of ground of about fourteen acres, which was over-run with thorns of both

forts, brambles, broom, and furze,
"When I had got it cleared of all this trash, my next business was to pare the hills off, and pile them, and, after a winter's mellowing, to break and spread them with a mixture of lime, and all other kinds of manure which I could collect. As the foil was very poor, having been exhausted by the great quantity of trash it had by the great quantity of traffi it had nourished for many years, I was not yet satisfied, but resolved to take the advantage of the first dry summer, to lead out the riches of a pond of about thirty yards long, and half as many broad, which had been occupied by a great number of geese, &c. and never thoroughly cleaned during near thirty process. years. I got through this work, tho at a great expence, being obliged to employ a confiderable number of draughts, left the rains should make the mud too thin, or the heat bake it too much, the mud being for a con-

fiderable (pace a yard perpendicular,

"All this mud I laid on my newly
improved ground, except a few cartloads, which were brought and laid by
the wall of a kitchen-garden, to be
mingled with the other foil.

"I had divided my improved ground, K k 2 referving

referving about four acres for meadow. Behold! the fucceeding year gave me a crop of feagrims both in my new meadow, my new cow-pasture, and the plot of ground in which the mud for my garden had been feattered; and more particularly in those parts where the ground had been broke, either to stub the thorns, &c. or to take away the hills, while the adjoining ground on every fide was free from this pernicious weed.

"As I knew little or nothing of this weed, I infered it to feed before those and parallers.

I took any necessary precautions for its destruction. The succeeding year presented me with a much larger crop, and I have been ever fince struggling for its extispation, and have the mor-tification to fee its encroachments on adjoining grounds by the feeds which

winds have carried.

"This fact, and another of the fame kind, in a piece of ground which I improved fince, at fome diffance from the former, have confirmed me in an opinion, which I before thought very probable, viz. "That all feils are originally impregnated with the feeds of almost all grafts and greeds." feeds of almost all graffes and weeds, (though of some in greater quantities) which only want a proper flirring and manure to awaken them to vegetation, though at the expence of one another, some being suffocated by that process which gives life to the others."
"I will add another striking instance in confirmation of this senti-

ment, notorious in this neighbourhood. "A confiderable quantity of the park at Gilling was over-run with brakes and moss, and that wretched grafs which grows in fuch company. Lord Fairfax, the owner, finding that he could not have his venifon fat as it ought to be, destroyed his park, and applied himself feriously to the improvement of it at a vaft expence. In course of time by due tillage he brought this worst part of it to be not only good corn land, but even tolerable, though coarfish, meadow and pasture; yet both of them thick fet with feagrims, a weed never feen there till the quantity of lime which his Lordship put into that poor foil had warmed it fufficiently.

" I have only to add, on this fub-ject, that I am perfuaded feagrim does

more harm in meadow than pasture land; for in the latter it only exhaufts the ground on which it flands to no good purpose; but in the former it communicates its difagreeable flench in the fweat to the good hay, and de-ftroys its fweetness. I advise, there-fore, that hay-makers be ordered to throw it with their rake stafts out of the swathe whenever they meet with it." Museum Rusticum, vol. v. p. 117.
RAGGED ROBIN. [Lychm: Flog-cueuli.] A species of campion common

in moift meadows, and by the fides of

rivers.

RAMPION, A species of campa-nula or bell-flower. The crimson rampion is greatly prized by the curious, for the beauty of its rich crimfon flowers, which exceed all the flowers we have yet feen in the deepness of its colour; and these commonly when their roots are strong, produce large spikes of these slowers, which conti-nue a long time in beauty, and make a most magnificent shew among other slowers. The time of their slowering is commonly in July or August; and if the autumn proves very favourable, they will fometimes produce good feeds in England. Thefe plants are natives of Virginia and Carolina, where they grow by the fides of rivulets, and make a most beautiful appearance; from whence the feeds are often fent to England. These feeds commonly arrive here in the spring, at which time they should be fown in pots filled with light earth, and but just covered over; for, if the feeds are buried deep, they will not grow. These pets should be placed under a frame, to defend them from the cold, until the feafon is a little advanced; but they should not be placed on an hot-bed, which will also destroy the

When the weather is warm, towards the middle of April, there pots thould be placed in the open air, in a fitua-tion where they may have the morn-ing fun till twelve o'clock, observing to water them conflantly in dry wea-ther; and when the plants are come up, and are grown pretty ftrong, they should be transplanted each into a fmall pot filled with fresh light earth, and placed in the same struction, obferving to water them in dry weather;

and, in winter, they fhould be placed under an hot-bed frame, where they may be sheltered from severe frosts; but, in mild weather, they should be as much exposed to the open air as

The March following thefe plants should be put into larger pots filled with the fame frosh earth, and placed, as before, to the morning fun; obferving to water them in dry weather, which will cause them to flower strong

the autumn following.

These plants are also propagated by parting of their roots; the best feafon for which is, either from after they are past flower, or in March; observing to water and manage them as hath been directed for the feedling plants both in winter and fummer.

RAMSONS, Broad -leaved wild

RANUNCULUS, There are eight or ten species of the ranunculus, some growing wild in different places; but the most beautiful is the Persian, or Turkey ranunculus, the varieties of which are almost numberies, but almost all flower in April or May.

The beds in which the Persan ra-nunculus roots are planted, should be made with fresh light sandy earth, at least three feet deep; the best foil for them may be composed in this manner, viz. take a quantity of fresh earth from a rich upland pasture, about fix inches deep, together with the green sward: this should be laid in heaps to rot for twelve months before it is mixed, observing to turn it over very often to fweeten it, and break th clods; to this you flould add a fourth part of very rotten neat's dung, and a propertionable quantity of fea or drift fand, according as the earth is lighter or Riffer; if it be light, audinclining to a fand, there should be no fand added; but if it be an hazel loam, one load of fand will be fufficient for eight loads of earth; but if the earth be ftrong and heavy, the fand should be added in a greater proportion: this should be mixed fix or eight months before it is used, and you Thould often turn it over, in order to unite their parts well together, before it is put into the beds.

The depth which this should be laid in the beds must be about three feety this fhould be below the furface, in preportion to the dryness or mollure of the place where they are fituated; which, in dry ground, should be two feet eight inches below the furface, and the beds raifed four inches above but in a moift place they flould be two feet four inches below, and eight above the ground; and, in this case, it will be very proper to lay some rub bill and flones at the bottom of each bed, to drain off the moisture; an fome very rotten neat's-dung be faid two or three inches thick, the roots will reach this in the fpring, and the flowers will be fairer. This earth I would by no means advise to be fkreened very fine; only turning over each time, you should be careful to break the clods, and throw out all large stones, which will be sufficient; for if it is made very fine, when th great rains in winter come on, it will cause the earth to bind into one folial lump, whereby the moifture will the detained, and the roots, not being ab to extend their tender fibres, wil

The beds being thus prepared frould die a fortnight to fettle, before the roots are planted, that there may be no danger of the earth fettling one-qually after they are planted, which would prejudice the roots by having hollow places in fome parts of the bed, to which the water would run and lodge, and fo rot the roots in fuch places. Then having levelled the earth, laying the furface a little rounding, you should mark out the rows by a line, at about fix inches diffante every way in ftraight lines; then y should open the earth with your fingers at each crofs, where the roots are to be planted, about two inches deep, placing the roots exactly in the middle, with their crowns upright; their with the head of a rake, you flould draw the earth upon the forface of the bed level, whereby the top of the roots will be about an inch covered with earth, which will be sufficient at first. This work should be done in dry weather, because the earth will then work better than if it were wet; but the fooner after planting there happens to be rain the better it will be for the roots, for if it should prov

dry weather long after, and the earth of the beds be very dry, the roots will be subject to mould and decay; there-fore, in such a case, it will be proper to give a little water to the beds, if there should no rain happen in a fortnight's time, which is very rare at this feason of the year; so that they will feldom be in danger of suffering

When the roots are thus planted, there will no more be required until towards November, by which time they will begin to heave the ground, and their buds appear; when you should lay a little of the same fresh earth of which the beds were composed about half an inch thick all over the beds, which will greatly defend the crown of the root from the frost: and when you perceive the buds to break through this second covering, if it should prove a very hard frost, it will be very proper to arch the beds will be very proper to arch the beds over with hoops, and cover them with mats, especially in the spring, when the flower buds will begin to appear; for if they are exposed to too much frost, or blighting winds, at that sea-son, their flowers seldom open sairly, and many times their roots are de-froyed; but this happens more fre-quently to the Persian kinds, which are tenderer, than to those forts which are pretty hardy; for which reason they are commonly planted in open borders, intermixed with other flowers, though in very hard winters thefe

are apt to fuffer where care is not taken to guard off the frost.

In the beginning of March the flower stems will begin to rife, at which time you should carefully clear the beds from weeds, and flir the earth with your fingers between the roots, being very careful not to injure them; this will not only make the beds appear handfome, but also frengthen their flowers. When the flowers are past, and the leaves are withered, you should take up the roots and carefully clear them from the earth, then spread them upon a mat to dry in a shady place, after which they may be put up in bags or boxes, in a dry room until the October sollowing, which is the feafon for plant-

This is a produce confined, in a manper, to a few parts of the kingdom, but it might very well be carried to others. We shall shew the profits to the hutbandman in general, and if we can tempt him to cultivate the plant, shall not leave him deficient in any article regarding the management.

There is the less reason to wonder

that colefeed, so profitable in some parts of the kingdom, is so little raised in others, for this, that the plant itself is less known than any other among the whole number of those cultivated for use. To ask what herb it is that yields this feed, is a question that would puzzle many befide the farmer. Even its name is not commonly known. Colefeed is the name of the feed only, it is also called rapefeed, but this does not lead to the matter: Cole is not the name of any plant, and rape fignifies turnip; we shall explain this matter, and before we enter upon the culture shew the farmer what the herb properly is that he is to cultivate.

Colefeed is very well known in Lincolnshire, and some other counties; and rape oil is as well known which is made from it,

The feed is known at the shops, and the plant by the farmers who raise it ; but nothing more. In some places the feed is fown among the other kinds of what are called young falleting; but in this case, as the first leaves are only eaten, no more is feen of it.

All the time that this ignorance remains about the form of a very uleful plant, it is common, wild on our ditch banks, and there needs nothing more than to shew its feed to the Lincolnfhire farmer, for him to fay that is it. These are the inaccuracies and errors which so greatly retard the progress of improvements in husbandry. The articles are themselves unknown to those who should be the authors of the a-

The price of coleseed, if the farmer chooses to fell it in that condition, is very confiderable, reckoning the quantity an acre yields; and if he will be at the trouble of drawing the oil, the method of doing it is very eafy, and his profit vaftly greater. Nor are these all the advantages he receives ing them again. these all the advantages he receives RAPE. [Rapa.] Rape or colesed. from the growth of this plant: it is

like the dyers weed in this, that it will grow on foils which will not yield any thing elfe to advantage; and though these are of a very different kind from those peculiar to the dyers weed, that flourishing on the most dry, and this best on marshy grounds; yet there are enough of thefe laft in many parts of the king-dom to flew how advantageous it must be to the nation to render the plant more known, and the culture of it among our farmers more universal, There is no other name by which

we can treat of this intelligibly to the farmer; than this formed from the feed: What herb it is that is thus called in the colefeed countries, or what is the plant that yields colefeed,

we are about to shew.

There are three kinds of plants, each containing feveral species, and diftinguished by different names, but are very nearly agreeing in their flowers, feed-veffels, and other general circumstances; these are, 1. The Cabbage kind. 2. The Turnip kind. And 3. The Navew kind. The confusion that has been made amongst these has been one occasion of the uncertainty about the colefeed plant,

The root of the turnip kind, and the ftalk of the cabbage kind, are what principally diftinguish them; as to the navew, it differs very little from the turnip, and that principally in the fmallness and length of the root. The flowers of these are alike, and

the feeds of them all refemble one another, and they will all in the fame manner yield that oil which we call rape oil; but there is one kind that yields it in greater quantity than the others. This is the wild navew, called

Napus Sylvestris, by authors, and this is the proper coleseed plant.

The turnip and cabbage kind we have in our gardens in great variety, and some have for curiofity introduced the garden navew, or Napus Sativus, but it is inferior to the turnip, and therefore but little regarded. authors who figure and describe the garden navew, figure also the wild kind, and this is what we have on the banks of ditches. We have observed that the navew differs little from the turnip, except in the shape and bigpels of the root; and this plant, which the colefeed plant, when nicely exa

otherwise much resembles the turnip kind, yet is properly a navew, because

it has a very small root.

Any of these kinds therefore will answer under the farmer's hands; but as the wild navew yields much the finer feed, and much the larger quantity of it, and that is also the richest in oil, so it is best to cultivate that particular kind. This is oftener to be had from Holland than any where elfe, and we shall inform the pur-

chafer how he is to know it by the eye.

The proper colefeed plant, or wild navew, is four feet high, and of an irregular growth. The root is long, flender, and white; it is of a fwee tafte than the turnip, but with fome-what more warmth. The lower leaves are long, large, deeply divided at the edges, and of a dufky green. One flalk usually rifes in the midft of these, fometimes two or more, This is round fmooth, of a pale green colour, and divided into many branches towards the upper part. The leaves upon this stand one by one, not in pairs; they are smaller and narrower than those from the root, and are of a paler co lour. The flowers grow at the top of all the branches, they are small, o a bright yellow, and perfectly refemble those of the turnip: After these com pods which contain the feed. This resembles turnip-seed, but that it is larger and fmoother. The comme appearance of the plant in fummer is with long spikes of pods, and a few flowers at the top of each.

This is the appearance of the wild navew in our fields and on banks. When it is cultivated for coleled it grows fomewhat taller and mon branched, otherwise there is no difference; and in good ground the root will be larger and more tender. There is no difference between the wild navew and the garden navew, except that the root of the garden kind is yet tenderer and thicker; but this is principally while it has only the lower leaves, for when it is suffered to ru to feed, the root grows flicky in the garden. Indeed there feems no other difference between the garden and the wild navew, but what is made by

The flowers and fructification of

wined, are thus formed. The flowtand in a cup compoled of four little oval-pointed green leaves, and his does not remain after the flower faded, as in the dyers weed, but writhes and falls off with it. The lower is composed of four plain nartow yellow leaves, placed croft wife. There are broadest at the ends, and not at all divided; they are of the fame length as the leaves of the cup. To the center of this flower rife fix filaments, four of which are confidely longer than the other two; they on them. In the center of these rises finall upright body, which is the rudinient of the feed veffel; this has a here are finall openings for receiving the fine dust out of the heads of the Staments; for in propagating the feed, when the leaves and cup of the flower are fallen, this part enlarges, and at length becomes a feed veffel of a longspressed mape, divided in the inide by a membrane, which shews ilf beyond its extremity, and conng feveral large, round, bright

This is the confinction of the flower and fruit of the colofeed plant, the proper name of which is wild navew, only in England, but in Flanders, and

er parts of Europe,

The feeds of the natural wild plant may be gathered and fown; but those from fuch as have been cultivated ife the flourest plants; these therepore the farmer is to choose, according

to the following marks :-

When the farmer has procured a out the most proper piece of ground for the crop. This will depend on ne two great articles, feil and fituand the better; and as to the other, all that is required is, that it lie tolesubly siry. There is no part of Eng-land where fo much colefeed is raifed as in the fens, but the lands are first laid dry that are intended for this purpose: In the same manner they cul-feed demand any particularly to its sevente it in Flanders and Holland, on own management. The black mellow ground originally marshy; but they earth whereon this crop should be are at all the necessary pains and ex-pence of making them properly dry first, under the plough; and when it is in

No lands are more proper for colefeed than fuch as have been fubject to overflowings, but they must be fecure from that accident while the crop is upon them: and must be properly dry, in order to receive it.

Whether this overflowing have been from land fleeds, great rivers within reach of the fea, or the fea isfelf, it prepares them equally for the crop of colefeed. Those where falt-water has come, are properer than any others; but sliey require fomewhat more preparation.

There are parts of Effex where the husbandman might raife colefeed to a very great advantage; and in many places where grounds have been newly recovered from the fea by banking, &c. colefeed is an excellent crop.

Every piece of fat rich land is proper for it; and the farmer need not fear to bestow it upon this species, for it will yield to his full content.

If he has a piece of ground that is too rank for wheat, or the other usual growths, let him few it with colefeed: this will yield an extremely rich inereafe, and the land that would not before have done for corn, will, by proper management, be perfectly well

prepared for it by this means.

The right foil for colefeed is mellow earth. A foft deep black mould, with little other ad-mixture, feeds it better than any other. The plants never grow to robust, and the feed is not formed in such plenty, or ripened in such persection on any other. This is the reason that marshy and fenny lands, when properly fitted for that purpose, answer so well with coleseed: This black deep mellow earth is the natural foil in these places, one scarce sees any other on breaking the turf in any This is of all others the best of them. foil for colefeed; but we have thewn it is not limited to this only; any deep fuil that is mellow, and properly fituated, will do.

The foil we have recommended as most proper for coleseed, is one of those that does not require any great labour in tilling; nor does the cole-

a proper degree of dryness, breaks freely and finely in the working. All that is particularly necessary to fit it' for coleseed, is to make it very fine; and this, unless the feafon prove quite unfavourable, or the husbandman be very unskilful, is a condition whereinto it is brought easily.

In May the land intended for colefeed is commonly fallowed; in June it is twy-fallowed; and in the latter end of that month, or the first week in July, the colefeed is fown.

After the last ploughing, a finetoothed harrow should be drawn over the field; after this, if the weather be dry, let there be a light roller carried over it; then let it be very gently and tenderly harrowed again. This last harrowing, after the roller has crushed and broke the lumps, usually makes it as even as the flower-border in a garden, and this is the proper condition wherein it is to receive the

If the weather prove too wet, let the rolling be deferred; and afterwards let it be performed with great caution; for though the roller may do great good in this case, it may also do much In some lands the soil is naturally so loose, but once harrowing di-

vides it fufficiently.

Coleseed is to be ordered much in the same manner as turnips. When it is got to some small height, hoers are to be fent into the ground, whose work ferves very well to cut down the weeds; and they may also thin the plants where they happen to have rifen too thick, as they will always do in fome places from this irregular manner of fowing. To thrive well in this way, they should be fuf-fered to stand at about ten inches diffance.

In the same manner, when the hufbandman shall think proper to raise this crop by the drill and horse-hoeing method; they must be hoed when they have got a little strength. In this respect we need not tediously repeat the particulars, the same management should be observed as in hoeing of turnips, raifed by this husbandry.

The weeds in the partitions between the double rows, are to be cut up with the broad band-hoe; and the plants

should be at the same time thinned till they stand but one every foot and a half, and these not opposite in the two series, but one in each row opposite to the middle of the space between two in the other.

When the plants are thus cleaned out and thinned, let the horfe-hoe or hoe plough be fent in as foon as any weeds appear in the intervals: This will thoroughly deftroy them,

and well break the ground.

This is to be repeated as often as the weeds rife, only observing this caution, that at first the plough tears up only the middle of each interval, and afterwards that it come nearer the edges.

When the coleseed is sown, there are only two things necessary, the fingling out the plants to a proper diftance, and the keeping them clear of weeds while young; for afterwards they will need no care on that head, the plants are so frong, and draw so much nourishment, that nothing can

live among them,

Which ever method of raising the crop be used, it is to be thus prepared for a good growth; and this done, the owner is to confider that it has more uses than one. Though the seed be the principal confideration, it is not the only one; and the more regard is to be shewn to another, because it comes in order of time before it.

We have observed that this plant is of the eatable kind. As it does not grow fo much into root as the turnip, its leaves are more delicate. She are very fond of them, and they afford rich and wholesome nourishment. This, properly managed, is a great article. The sheep are supplied at a time when they extremely want nou-rishment, and the crop is far from being injured; on the contrary, it is improved by it. This, therefore, is to be confidered as a very effential part in the management of a colefted crop, and we shall give the practical hufbandman the method of ordering it to the best advantage.

Colesced having been fown in the beginning of July, shoots with fome firength; after a few weeks keeps itfelf up during the droughts of autumn, and getting new Brength and fize i

the leaves from the rains, which introduce the winter, becomes in a condition to refift the ftrongest frosts. It stands well, and on every open day or two, grows during the depth of win-ter; fo that in January, February, and March, the ground is well-covered.

The leaves which now rife are of no real use to the plant in perfecting its feed, which is to be done the fueceeding fummer. If they grow very rank they rather are injurious, fwallowing up too much of the nourishment that should go to the forming of the young stalk, therefore they may be spared without injury. Here is then a great supply of food for sheep, at a season when grass is low, and it is extremely wanted; and the sheep are to be turned in to eat it without any damage to the succeeding crop of seed.

There are those who fow coleseed. in some parts of Northamptonshire for this use alone; and it answers the in-tent very well. They use the poorest land for this purpose, and on that, although the plant would never grow vigorous and strong so as to yield any profitable quantity of feed, it shoots

up very well in leaves.

In the proper lands for this growth, the leaves at this feafon are much finer and stronger, and they may be eaten

without damage to the crop.

There are those who prefer the cole plant on these poor lands for food for sheep, to the young growth on fuch as is richer, and they fay it is more wholesome; they are not with-out reason; but their experience on this head should not have led them to discard the use of coleseed for feeding on rich ground, but to use it with discretion.

The disadvantage that attends the feeding of sheep on the rank growth of coleseed in rich ground is, that it makes them swell. This is the same consequence that happens from feed-ing them on clover, but it is easily re-medied. It is only at first that this rich food takes so ill an effect, and this may be prevented by proper regu-lations. When the sheep are first surned in, let it be towards the middle of the day; and an hour before funfet let them be driven out again into a common pasture, The next day let

them be turned in earlier, and driven out later; and fo the third, fourth, and fifth; after this, let them be just driven out at night for two or three days more, and let in again as foon as they will in the morning. This will prevent the effect of the colefeed at first, and being now hardened to it by a little custom, they may be left in the fields of it altogether, and will thrive upon it excellently, without the leaft damage.

Under this article of the effect of coleseed on sheep, it is proper to mention, that the first shoots are not all that ferve this purpose. There is another growth of them that is less rank, and that the sheep love better; and which not being liable to affect them with any disorder, is to be trusted to

them at their difcretion.

The shoots of the colefeed after gathering the stalks for feed, are also a mild, fweet, and wholesome food we have been naming. These grow very ftrong when there has been rain, but they are never rank, or over-rich. Every one knows the difference there is between the cabbage and coleworts; full-grown leaves first cut for the pot, and the sprouts, that grow on the flumps and stalks after cutting; the difference is just the same between the first growth of large leaves from the coleseed plant, and the shoots that rife after the cutting down the fullgrown stalks for feed

Towards the end of June the colefeed plant in whatever way it has been raised, will be fit to cut. The husbandman must therefore keep his eye upon his field very carefully toward that period; for it is of the utmost importance to him to feize it when it comes. No day of the month, or other precise time, can be named for the gathering this crop, because the differences of soils and seasons promote and retard its ripening; and even the variety of management, or the age of the plant, may make ten days or a fortnight difference in the ripening in two fields of the fame foil in the same year. We have told the hufbandman about what time he is to expect it; and shall add the signs by which he shall know that it is fit for harvest. One caution we must give him withal, that as the foil and method

of culture may make a very great alteration in the time of ripening, he must be upon the watch accordingly, expecting it earlier by a fortnight in rich foils and the most careful conduct, than he need in poor land in the common way. It will be in vain that we lay down the figns of its ripening, if

he flips the time.

We have observed that the coleseed plant has fmall flowers on the tops of the stalks and branches, which when the leaves fall off are succeeded by pods. As the flowers that opened first are thus followed by the seed-vessels, other flowers open upon the tops, which shoot up continually higher and higher. Thus, when the plant begins to flower, nothing is feen but a little button or tuft of buds at the top of the stalk, and of every branch, with one or two flowers opened or opening upon it; but when it has been some time flowering, the aspect differs, for then the branches having lengthened from the time of their beginning to flower, all that part of them which was the top, and where successively the former flowers appeared, is covered with feed-veffels; thus each branch terminates in a spike of feed veffels, a foot or more in length, with a few flowers at its top.

The quantity of feed is the riches of the crop, therefore it would appear at first fight, that the longer the plant flood, fo long as it continued flowering, the more advantageous would be the growth, but there are limits to

The course of nature is to ripen these seeds, and then shed them upon the ground for producing the plant again; therefore when ripe the pods open of themselves, and the seeds are This no art can prevent; and for that reason the time is to be watched when any of them begin to open, and that is the exact period for

gathering.
When fome of the pods approach towards ripeness they change colour, and the greenness is only feen at top; when, upon a curfory view, there are fome found to grow brownish at the bottom, and those in the middle are yellowish or pale, those at the top only being green, then the time of gather-

ing is at hand. It is the interest of the owner to let them fland fo long as all are safe, but no longer. He is therefore now to look into the field once or twice every day, in a more strict manner. He must examine the bottom pods of the ripest spikes; so long as thefe are close all is fafe; but as foon as fome of them begin to open, the time of gathering the crop is come, for after this every hour's standing will be attended with loss.

The best method of cutting cole-feed is with a strong sickle, in the fame manner as wheat is reaped; but this must be done carefully. There is no part of the farmer's occupation that requires more expert and honest labourers than this. The stalks are pretty thick, and by that time the feed is ripened thus far, they have lost their juicy condition, and are grown hard and flicky. They are not eafy to be cut, and yet that must be done evenly and with little shaking. A great deal' of care is to be taken that the sickle goes eafily through them, and when separated from the root they must be laid gently down in handfuls, that they may dry.

About one-third part of the feed is ripe at the time when the lowest pods are ready to open; in the lying ex-posed to the heat of the fun at this season, more than another third hardens, and becomes good; so that above two-thirds of the whole quantity of pods yield good feed, and this is all that can be expected; for if the farmer were to flay for the ripening of the other third, while growing, he would lose the feed from the lower pods, which is much more valuable; and the feed is of a fufficient growth to ripen or harden in the fun after the

plant is cut down.

When the crop has been once laid on the ground it is not to be flirred till dry, for the feeds in the lower pods are fo loofe, that they will shake out with the least motion, and be lost. What is required from this expolure is, to dry and harden them, and they will get this sufficiently by lying tolerably thin, without being moved. If the weather be very hot, the business is done the fooner; if otherwise, somewhat more time is required; generally from ten days to a fortnight

Lla

proves sufficient. The proof that they are dried enough is, when the pods toward the upper part of the fpikes open easily, and the feeds in

them are hard.

When the whole is in this condi-tion, nothing is required but to get it to the barn, and thrash it. Lincolnshire, they save themselves a part of this trouble, by thrashing it in the field; they spread a large sheet upon a level part of the ground, and lay a quantity of the herb on it. little thrashing does to dislodge the feeds, which are already loofe and most of them in danger of falling out of their own accord; but it is an irregular method; it leaves the farmer's produce, after all his toil, very much at the mercy of the winds, and cannot be performed fo well as in doors,

The method we would therefore recommend to the husbandman, if the ground be any thing near home, is this: Let a parcel of large sheets be spread in the field, and the dried stalks carefully taken up in their bundles, and laid on them. Each sheet will hold a great deal this way; for though the parcels must be very gently moved to the sheet, they may be pressed hard, and handled roughly there; for what

feeds fall out will be faved.

When the sheets have as much in them as they will hold, the edges and corners are to be gathered in and fastened, and the feveral parcels are to be carried to the barn, and there thrashed with a careful but light hand, that all the feed may be got out, and as little of it as possible bruised, for it is tender and easily hurt, especially when fresh.

After it is separated from the refuse that was mixed among it in the thrashing, it must be spread on a floor pretty thin, and turned often till it is thoroughly dry and hardened; for otherwise, when put up, it will quick-

ly grow damp and mouldy.

The use of the colessed is not over when the oil has been preffed from it. The cakes that remain are a large quantity, and as the fresh leaves feed theep, thefe, in a proper method of giving them, turn to a very good account for feeding of cows. In win-ter this is an excellent food for them, for keeping them in heart and ftrength,

at a time when other good food is

Calves are also to be fed with colefeed cakes very profitably, but that in a particular manner. After the oil is pressed out as clean as the common practice can obtain it, there still remains fo much of it in the cakes, that when they are beat to powder, and mixed with hot water, they make it white and milky, in the same manner as sweet almonds beat up with water make an emulsion. This is the way of giving it to calves, and it proves a convict whelesome and strengthen. very rich, wholesome, and strengthen-ing food. Calves may be fed with this from three days old, till they are fit to eat grass or hay.

Wild RAPE. Charlock.

RASPBERRY. [Rubus Ideus.] This plant grows naturally in the woods in the northern parts of England, but is cultivated in gardens for its fruit, which supplies the table at the season when they are ripe. There are two or three varieties of this, one with a red, and the other a white fruit, and the third generally produces two crops of fruit annually; the first ripens in July, and the second in October, but those of the latter season have seldom much flavour. These are accidental varieties, but the fourth fort we believe to be a distinct species, for the leaves are trifoliate, larger than those of the common fort, woolly on their under fide, and the branches and stalks have no thorns. This produces but few fruit, and those are small, which has occasioned its being neglected,

The raspberry is generally propagated by suckers, though we should prefer fuch plants as are raifed by layers, because they will be better rooted, and not fo liable to fend out fuckers as the other, which generally produce fuch quantities of fuckers from their roots as to fill the ground in a year or two; and where they are not carefully taken off or thinned, will cause the fruit to be small, and in less quanti-ties, especially when the plants are placed near each other; which is too often the case, for there are few persons who allow these plants sufficient room.

In preparing these plants, their sibres should be shortened; but the buds, which are placed at a small distance from the stem of the plant, must

not be cut off, because those produce the new shoots the following summer. These plants should be planted about two seet as sunder in the rows, and sour or five seet distant row from row; for if they are planted too close, their fruit is never so fair, nor will ripen so kindly, as when they have room for the air to pass between the rows. The soil in which they thrive best, is a fresh strong loam, for in warm light ground they do not produce so great plenty of fruit, for they naturally grow in cold land, and in shade; therefore when they are planted in a warm sitution and a light soil, they do not succeed.

The feafon for dreffing of them is in October, at which time all the old wood that produced fruit the preceding furimer, should be cut down below the furface of the ground, and the young shoots of the fame year must be shortened to above two feet in length; then the spaces between the rows should be well dug, to encourage their roots; and if you bury a very little rotten dung therein, it will make them shoot vigorously the following summer, and their fruit will be much fairer. During the summer season, they should be kept clear from weeds, which, with the before-mentioned culture, is all the management they will require; but it is proper to make new plantations once in three or four years, because when the plants are suffered to remain long, they will produce few and small fruit.

The Virginian Flowering RASPBERRY is commonly propagated in the nurseries as a flowering shrub. The flowers of this fort are as large as small roses, and there is a succession of them for two months or more, so that they make an agreeable variety during their continuance. This fort frequently produces fruit in England, which are not so large as those of the common fort, and have little flavour. These ripen in Septembers, or the beginning of

October.

RAT, the name of a well-known animal, very troublesome to the far-

mer, &c.

We shall here give the two following receipts, as they are said to be effectual, for destroying rats.

The first has the fanction of the

Dublin fociety, who on the 19th of November 1762, ordered a premium of five guineas to one Lawrence O'Hara, for this discovery; which is, "one quart of oatmeal, four drops of rhodium, one grain of musk, and two nuts of nux vomica finely rasped." This mixture is to be made up in pellets; and laid in the holes and places which the rats frequent.

The other receipt is thus: "Take

The other receipt is thus: "Take of the feeds of flaves-acre, or loufeworth, powdered, one fourth part, and of oatmeal three parts; mix them well and make them up into a pafle with honey. Lay pieces of it in the holes, and on the places frequented by rats or mice, and it will kill fuch ver-

min as eat thereof."

The first step taken by rat-catchers, in order to clear a house, &c. of those vermin, is to allure them all together to one proper place, before they at-tempt to defiroy them; for there is fuch an inftinctive caution in these animals, accompanied with a furprifing fagacity in discovering any cause of danger, that, if any of them be hurt, or pursued, in an unusual manner, the rest take the alarm, and become fo fhy and wary, that they elude all the devices and stratagems of their purfuers for fome time after. This place, where the rats are to be affem-bled, should be some closet, or small room, into which all the openings but one or two may be fecured; and this place should be, as near as may be, in the middle of the house, or buildings. It is the practice, therefore, to attempt to bring them all together to fome fuch place, before any attempt be made to take them; and, even then, to avoid any violence, hurt, or fright to them, before the whole be in the power of the operator.

The means used to allure them to one place are various: one of those most easily and efficaciously practised is, the trailing some piece of their most favourite sood, which should be of the kind that has the strongest scent, such as toasted cheese, or broiled red herring, from the holes or entrances to their recesses in every part of the house, or contiguous building, whence it is intended to allure them. At the extremities, and in different parts of the course of this trailed tract, small

quantities

grantities of meal, or any other kind of their food, should be laid to bring the greater number into the tracks, and to encourage them to pursue it to the center place, where they are intended to be taken; at that place, where time admits of it, a more plentiful repast is laid for them, and the trailing repeated for two or three

nights.

Besides this trailing and way-baiting, some of the most expert of the rat-catchers have a shorter, and perhaps more effectual method of bringing them together; which is, the calling them, by making such a kind of whistling noise as resembles their own call; and by this means, with the assistance of the way-baits, they call them out of their holes, and lead them to the repast prepared for them at the place designed for taking them. But this is much more difficult to be prachised than the art of trailing; for the learning the exact notes, or cries, of any kind of beasts or birds, so as to deceive them, is a peculiar talent, not castly attained to in other cases.

In the practifing either of these me-liods of trailing or calling, great causion must be used by the operator, to suppress and prevent the scent of his feet and body from being perceived; which is done by overpowering that feent by others of a stronger nature. In order to this, the feet are to be covered with cloths rubbed over with affa-fretida, or other firong smelling substances; and even oil of rhodium is sometimes used for this purpose, but sparingly, on account of its dearness, though it has a very alluring, as well as disguising effect, as will be observed below. If this caution of a voiding the fcent of the operator's feet near the track, and in the place where the rats are proposed to be col-Rected he not properly observed, it will very much obstruct the success of the attempt to take them; for they are very shy of coming where the scent of human feet lies very fresh, and insimates to their fagacious inflinet, the presence of human creatures, whom they naturally dread. To the above-mentioned means of alluring by trailing, way-baiting, and calling, is added another of very material efficacy, which is, the use of oil of rhodium,

which, like the marum lyriacum in the case of cats, has a very extraordinary fascinating power on these animals. This oil is extremely dear, and therefore sparingly used. It is exhaled in a small quantity in the place, and at the entrance of it, where the rate are intended to be taken, particularly at the time when they are to be last brought together, in order to their destruction; and it is used also, by smearing it on the surface of some of the implements used in taking them by the method below described: and the effect it has in taking off their caution and dread, by the delight they appear to have snit, is very extraordinary.

It is usual, likewise, for the operator to disguise his figure as well as scent; which is done by putting on a fort of gown or cloak, of one colour, that hides the natural form, and makes him appear like a post, or such inanimate thing; which habit must likewise be scented as above, to overpower the smell of his person; and besides this, he is to avoid all motion, till he has secured his point of having all the rats in his power.

When the rats are thus enticed and collected, where time is afforded, and the whole in any house and out-buildings are intended to be cleared away, they are suffered to regale on what they most like, which is ready prepared for them, and then to go away quietly for two or three nights; by which means those, which are not allured the first night, are brought afterwards, either by their fellows, or the effects of the trailing, &c. and will not fail to come duly again, if they are not disturbed or molested. But many of the ratcatchers make shorter work, and content themselves with what can be brought together in one night or two; but this is never effectual, unless where the building is small and entire, and the rats but few in number.

The means of taking them, when they are brought together, are various. Some entice them into a very large bag, the mouth of which is fufficiently capacious to cover nearly the whole floor of the place where they are collected; which is done by smearing some vessel placed in the middle of the bag with oil of rhodium, and laying in the bag baits of food. This bag,

which

which before lay flat on the ground with the mouth spread open, is to be suddenly closed when the rats are all in it. Others drive, or fright them, by flight noises or motions, into a bag of a long form, the mouth of which, after all the rats are come in, is drawn up to the opening of the place by which they entered, all other ways of retreat being fecured. Others, again, intoxicate or poison them, by mixing with the repail prepared for them, the coculus Indicus, or the nux vomica. A receipt for this purpose has appeared, which directed four ounces of the coculus Indicus, with twelve ounces of oatmeal, and two ounces of treacle or honey, made up into a moist paste with strong beer; but if the nux vomica be used, a much less proportion will ferve than is here given of the coculus. Any fimilar composition of these drugs, with that kind of food the rats are most fond of, and which has a strong flavour, to hide that of the drugs, will equally well answer the end. If, indeed, the coculus In-dicus be well powdered, and infused in the beer for some time, at least half the quantity here directed will ferve as well as the quantity before-men-tioned. When the rats appear to be thoroughly intoxicated with the coculus, or fick with the nux vomica, they may be taken with the hand, and put into a bag or cage, the door of the place being first drawn too, lest those which have strength and sense remaining efcape,

By these methods, well conducted, a very confiderable part of the rats in any farm, or other house, and the con-

tiguous buildings, may be taken.
RATTLE-GRASS. [Rhinanthus.] This is a very troublesome weed grow ing among grafs, and spreading itself

over the whole ground.

RATTLESNAKE-Root. [Senecka.]
The root of a species of polygala, which grows spontaneously in Virginia, and bears the winters of our own climate. This root is usually about the thickness of the little finger, varioully bent and contorted, and appears as if composed of joints, whence it is fupposed to resemble the tail of the animal whose name it bears: A kind of membranous margin runs on each fide, the whole length of the root,

Its tafte is at firft acid, afterwards

very hot and pungent.

This root is not at prefent much known in the shops. The Senegare Indians are faid to prevent the fatal effects which follow from the bite of the rattle fnake, by giving it inter-nally, and applying it externally to the wound. It has of late been strongly recommended in pleurisies, peripneumonies, and other inflammatory diftempers; in these cases, Le-mery, du Hamel, and Jussieu, expe-rienced its good success (see the French memoirs for the years 1738, 1739. Its more immediate effects are those of a diuretic, diaphoretic, and cathartic; fometimes it proves emetic: the two last operations may be occasionally prevented, by giving the root in fmall dofes, along with aromatic fimple waters, as that of cinnamon. The usual dose of the powder is thirty grains or more.

Some have likewise employed this root in hydropic cases, and not with-out success: Bouvart (in the memoirs above-mentioned, 1744) relates ex-amples of its occasioning a plentiful evacuation by stool, urine, and perspiration, and by this means removing the disease, after the common diuretics and hydragogues had failed a Where this medicine operates as a cathartic, it generally proves successful-if it acts by liquifying the blood and juices, without occasioning a due difcharge, it should either be abstained

from, or affifted by proper additions.
RAT-TAILS, Excrescences which creep from the pattern to the middle of the shanks of a horse, and are so called from the refemblance they bear to the tail of a rat. Some are moift, others dry; the former may be treated with drying ointment and wathes, the latter with mercurial ointment. If the hardness does not submit to the last medicine, it should be pared off with a knife, and dreffed with turpentine, tar, and honey, to which verdi-greafe or white vitriol may occasionally be added; but before the use of the knife you may apply this oint-

Take black foap four onnces, quicklime two ounces, vinegar enough to make an ointment.

RED-LAND, a term much used by hufbandmen husbandmen to exprese a sandy soil of a reddish hue, interspersed for the most part with pieces of fand ftone of the fame colour, or fomewhat deeper.

There are feveral varieties of this foil, one of which is almost entirely made up of fand; another with an admixture of clay with the fand, the whole making a loofe loamy earth; and a third, full of fragments, of a poor fandy iron ore, and often containing thining fpecks of felenitæ.

REDWEED. Wild Poppy.

REDWOOD. [Ceanothus Arborescens] This plant grows naturally wild in the American islands; it rifes with a thrubby stalk eighteen or twenty feet high, fending out feveral horizontal branches, which are garnished with oval veined leaves; the flowers come out at the wings of the leaves, with very fhort foot-flalks; they are of a white herbaceous colour, and are fucceeded by dry capfules, shaped like those of the first fort,

This plant requires to be placed in warm stove, otherwise it will not thrive in England; it is propagated by feeds, which must be sown upon a hot-bed in the spring; and when the plants are fit to remove, they should be each planted into a separate small pot, filled with light fandy earth, and plunged into a hot-bed of tanners bark, observing to shade them till they have taken root; then they must be treated in the fame manner as other tender exotic plants. In the autumn they must be placed in the bark-slove, and during the winter must be watered with great caution, for too much moisture at that season will destroy

RED-WORM, the name of an in-

fest very destructive to young corn. "I have often (fays Mr. Baker, in his report to the Dublin Society) heard of the havock which red-worms make in young wheat, barley, and oats; and in some few writers upon huf-bandry have read of them; but never faw them till May 1764; when, to my great mortification, in a few days, they destroyed, almost totally, nine acres of my wheat, for I did not reap above half a barrel per acre. This misfortune induced me to propose to the confideration of the Dublin Society, whether the offer of a premium might not probably produce a difecvery of some effectual method for destroying so injurious an infect, to the infinite advantage of the public: and the fociety were pleafed to offer a premium accordingly.

" I now have the honour to lay before them, what has occurred to me

upon that subject.
"The most ingenious M. de Chateauvieux speaks of an insect, which is certainly the same kind, if it be not the very infect which I have now under confideration. This gentleman, after faying, "our wheat, in the month of May 1755, fustained a loss, which even that cultivated according to the New Husbandry, did not escape, defcribes the worm thus: We found in it many little white worms, which afterwards became of a chefnut colour, They post themselves between the blades and eat the stems. They are usually found between the first joints of the roots; every stalk which they attacked grew no more, but became yellow, and withered. The fame misfortune happened to us in the year 1732. The infects appeared about the middle of May, and made fuch havock, that the crops were almost destroyed."

" It perhaps might be expected, that this great man should have made the very enquiry which we are now upon, as the lofs appears to have been very great in Geneva, at the two periods which he mentions; but when we confider, how much the high office which he held in the city and republic of Geneva, must have engaged his attention, it is rather astonishing that he could oblige the world fo much as he hath done by his repeated experi-ments in husbandry, and his judicious observations upon them: It is therefore less to be wondered at, that this

" The ingenious Mr. Benjamin Stillingfleet also, in the second edition of his miscellaneous tracts, in a note, p. 175-6, speaks of an infect, which is probably the fame as that we are feeking to destroy. His words are,

circumstance escaped him.

"Thus in Suffolk, and in fome parts of Norfolk, the farmers find it their interest to encourage the breed of rooks, as the only means to free their grounds from the grub, from which

the tree or blind beetle comes, and which in its grub flate destroys the roots of corn and grafs to such a de-gree, that I myself have seen a piece

of pafture-land, where you might turn up the turf with your feet.
"Mr. Matthews, a very observing and excellent farmer of Wargrave in Berkhire, told me, that the rooks one year, whilst his men were hoeing a turnip field, fat down in part of it, where they were not at work, and that the crop was very fine in that part, whereas in the other part there were

no turnips that year.
"We fee, that M. de Chateauvieux describes this worm as being first white, and afterwards becoming of a chefnut colour. I have carefully fought them at different periods during the past year, but always found them of the same chesnut colour, never varying in any particular, except that of fize, which I find to be the case at all sea-

fons in which I have feen them.

"The infect which Mr. Stilling-fleet speaks of, he calls a grub, which, he says, destroys forn and grafs: This induces me to believe that it is the fame infect (though the report which he relates from Mr. Matthews feems to contradict it) because I have obferved, that the red or chefnut worm never appears voluntarily upon the furface; but when the earth is turned up, either with plough or spade, the rooks and crows are very bold in their approach to pick them up; a circum-fiance which I own has in some degree abated my enmity to these birds; I therefore never destroy nor frighten them off my land whilst I am ploughing it; but when I sow, when the corn rifes, and when it is tipe, I destroy or banish them as well as I can, because the mischief which they do at those times is intolerable.

" A member of the Dublin Society informed me last fummer, that fome informed me last summer, that some of his turnips were destroyed by the worm; I had some sew which decayed in their leaves, and became of a lemon colour, preceding the putresaction which followed and destroyed the turnips: I examined their roots, but could not discover any insect which had injured them, and therefore I cannot pronounce that it is the redworm which destroyed this gentle-Vot. H.

man's turnips; but I shall be very watchful with respect to this circumstance upon every opportunity that may present itself.

"I have observed my lucerne to decay in its tops soon after it has been up, and upon examining the roots, I have found the red-worm which had cut them off.

cut them off.

"This infect feems to be every where in Ireland called the red-worm; by fome of the Epglish writers who have spoken of an infect which deftroys corn in the manner already mentioned, which I think is undoubt-edly the same, it is called a grub; by others the large maggot, and the rook worm, because the rooks eat it; but as none of the writers have given any other description of it, than the name by which they respectively call it, I shall endeavour to describe it.

" Red-worms are about half an inch long, and about one tenth of an inch in diameter; they are jointed in their tkins, and are of a very firm texture; they have many thort legs, two small black specks, which appear to be their eyes, and two small points springing from their heads, with which I believe they cut the corn, and which, in that work, I apprehend, act like forceps: and all I have feen of this fpecies are of a bright chefnut colour, For this reason, I should conceive it would be more descriptive to call them the chesnut worms.

"When they are exposed to the air,

by turning up the earth which is in-fested with them, they will very soon cover themselves again in the soil, which they are very capable of doing, by the strength which their make gives them, although they appear to be a fluggish insect, and have not the advantage of a sliminess upon their skins which the common large creeping worm has, which enables that inoffensive worm to penetrate the earth, and get under timber and flones with

" The red-worm immediately endeavouring to cover itself from the air, is certainly from natural instinct, as it will soon die when exposed to the air, as will appear by the experiment. Numb. 10, hereafter mentioned.

"These worms destroy wheat, barley, oats, and succept, whilst in an M.m. instant.

infant state, in the months of March, April, and May. Late-sown barley and oats they will destroy as late as June. I have not yet experienced that they will destroy any other crops.

"The mischief done by them is in dry weather. Rain sufficient to penetrate the ground, makes them desired from destroying the corn; and, Liuppose, every thing else which they are

from destroying the corn; and, Lsuppose, every thing else which they at
any time injure.

"They cut wheat off just above
the crown of the roots; barley and
oats in the same place, and also higher
up, upon any part of the stem, which
is below the surface of the earth.

"These worms seem to abound
more in ground which is lightly titled,
than in such as bath been well tilled;
but, in lay ground, they seem to be
more numerous than any where else;
and the fields upon my sam, in which
I have sound them, are wetter than
other fields where they are not; whether that circumstance contributes to sher that circumstance contributes to their increase, I cannot fay, but the following experiments prove that they will live longer in water than they can

when exposed to the open air.

Experiments on Red-worms.

Numb. 1. I put ten red-worms into a wine glass with common sale in it. They were all dead in twenty. four hours.

4 Norme, 2. Into a glass with brine in it I put ten red-worms. They were all dead in fix hours.

" Numb. 3. Into a glass with lime in it, which had been flaked for a

in it, which had been flaked for a long time, and exposed to the weather, I put the like number. They were all dead in forty-four hours.

Numb. 4. Into a glass with the above lime, and some water in it, I put the like number. They were dead in twenty hours:

Numb. 5. Into a glass with lime newly flaked, and when cold. I put the like number. They were dead in fourteen hours.

in fourteen hours.

"Numb. 6. Into lime-water, made with cold water, I put the like number. They were dead in ten hours.

"Numb. 7. Into a glass with foor in it, I put the like number. They were dead in four hours.

"Numb. 8. Into foot and water I put the like number; They were dead in four hours,

dead in four hours,

"Numb. 9. Into fair water I put the like number. They were dead in fifty-two hours.

Numb. 10. Into a glass without any thing in it, I put the like number. They were dead in thirty-two

" By these experiments we fee all the articles used will kill this infect in a thort time, particularly the falt and foot. I thought it necessary to confider different articles, the better to fuit different parts of the kingdom.

"Where lime can be conveniently Where lime can be conveniently had, and that it is used as a manure, I am apt to believe from the experiments, that no injury can be sufficient from these worms, but I am assaid a small quantity will not effectually destroy them; besides, I should fear, if it were not put on before the sowing of the corn, that it might singe the blades of the corn; for, from the experiments, it appears, that lime newly periments, it appears, that lime newly flaked, is more fuddenly destructive to them than old lime, and therefore it

is to be preferred.

"Where lime is yied for no other purpose than to destroy this worm. I should conceive that about eight barreis regularly fown by hand on an acre of ground might be sufficient; it must be first slaked and cold before a man can poffibly cast upon the ground with his hand, lime being a very strong caustic; and even when it is cold, the man should have a thick glove upon his hand.

" Where falt shall be used to destroy this worm, it must always be fown upon the ground before the intended crop; for, although corn will vegetate and receive benefit from falt as a manure when it is used antecedent to th fowing the corn, yet, if it be added after the corn is growing, it will cer-tainly deftroy it; and therefore, it should never be used for this puspose, but before the corn is fown, or at leaft

before it vegetates.

"I conceive that where falt is used for this purpose only, about four hundred and a half to an acre will answer this purpose, which is a title more this purpose, which is a title more

than one ounce to every fquare yard.

"We see by the experiment, that foot kills this worm as foon as fait; and, as in most places it is to be had at a much less price than fait, I think

there can be no doubt about preferring of it; befides which, it may be fafely used after the corn is up. "I had fome parcels of barley under experiments, which these worms began to destroy; and in order to convey the soot as soon as possible to the roots of the plants, I mixed a little of it in water, and poured it on the plants with a garden watering-pot; the con-fequence was, that I did not lofe one

plant afterwards.

"It will hardly be imagined, that I mean that the fame method is to be purfued upon a whole farm : No; the method I would recommend to the practice of the farmer is this, to spread of east by hand, as he fows his corn, about fix or eight barrels of foot on an arc, and let him be careful to choose a caim day for the work, other-wife, the wind will carry away great part of it, and as what remains can-not be regularly disposed, let him be careful to do it early enough in the fpring, that the rain may wash the foot and convey it to the roots of the plants before the worm begins the mischies; if he does this, I am per-

fuaded his crop will be preferred.
"We fee by the experiments, that
this worm will live longer in water by
twenty hours than when expeled to the open air; but at length, i. e. in fifty-two hours, they died in the water; perhaps this might be from the effect of drowning, but if fo, I might have expected they would have been totally destroyed in my two fields in the winter of 1763 and 1764, by the immo-derate rains which fell at that feafon for a long continuance, by which the land was often flooded. But they furvived that winter, as appeared by the great loss I afterwards fuffained by their destroying my wheat; and there-fore, whether water be an enemy to them or not, it feems not easy to determine: but if those which died in the glass of water were really drowned, yet, I think we may conclude, that water is necessary to their existence in the earth, and probably aids them in getting their food from it; and what feems to configurathis accordance. ems to confirm this notion is, that when the land is wet, they do not touch the corn, but as foon as ever the land is dry, they begin their mif-chief. However, this speculation I

must fubmit to the consideration of persons more capable of discussing it

" We fee by the experiment, Numb. To, that they cannot live in the op air; which feems to prove, that, where they abound in land, the oftener it is ploughed, particularly in the fummer, when they cannot penerate the ground fo easily as when it is main they are the ground to easily as when it is moift, they must be, by such plough-ing, greatly diminished; besides which, the frequent ploughing gives the crows more opportunities of picking them up, in which, as I before said, they are very warehold.

are very watchful.

"Frequent ploughing has been recommended by fome writers, as the
only means of destroying this worm; only means of destroying this worm; and they have recommended the plough's being stuck with nails, urging, that by those nails the worms are cut to pieces; others have recommended walnut leaves being soaked in water, to sprinkle the land; and steeping seed-corn in various liquors, as infallible remedies: But such methods as these are sounded upon mistaken principles; they only mistead the farmer, and must disappoint him.

"Worlidge recommends a strong lye made of sixed saits, but that would be impracticable, Mortimer recom-

be impracticable. Mortimer recommends fea-water for fuch lands as are near the fea-coaft, which I believe would answer very well. He fays he used foot once with success, but that it did not succeed with him afterwards. I am perfuaded he did not use the foot

am pertuaded he did not use the foot early enough to have it washed into the ground by rain, or perhaps he used too small a quantity.

"I would not be thought to arrogate any merit to myself on account of what I have offered on this subject, since it appears, that other persons have used the articles which I have recommended against this common e-nemy; but many persons have been disappointed in their expectations from these remedies, which must have arisen from their either having used too small a quantity, or not having observed the necessary precautions; if those which I have recommended shall be put in practice, and sound to answer, I shall think myself amply rewarded." REED. [Mundo] The species are, I. The common Marsh Reed. 2. The commended against this common e-

r. The common Marth Reed, 2. The

manured, or Portugal Reed, sometimes called the evergreen. 3. The varie-gated Indian Reed of Theophrassus. . The Bamboo, or great Indian The Tree-like Reed. 6.

The Turkish Reed.

The first fort is so very common by the fides of rivers and large standing waters in divers parts of England, that it is needless to say any thing of its culture. This is cut in autumn, when the leaves begin to fall, and the Rems are changed brown for making hedges in kitchen gardens, and for

many other places.

The fecond fort, although a native of a warm country, yet will bear our cold of moderate winters in the open ground; it dies to the furface in autumn, and rifes again in fpring; and if kept supplied with water in dry wea-ther, will grow ten or twelve feet high the same summer. This is propagated by parting the roots early in the spring before they begin to shoot, and will in a year or two, if the ground be good, make very large stools, from each of which you may have twenty

or thirty large canes produced.

The stalks of this fort are brought from Portugal and Spain, and are used by the weavers, as also to make fishing-

rods.

The third fort is supposed to be a variety of the second, differing therefrom only in having variegated leaves. This plant will not grow so large, nor will it resist the cold so well, therefore will not live in the open air through the winter in England; so the plants must be kept in pots, and housed in the autumn.

The two forts of Bamboo are of great fervice to the inhabitants of India, who make most of their common u-tensils of the stems of these canes, which grow to a prodigious magnitude

in those countries.

We have plants of the fourth fort in the English gardens, which are more than twenty feet high; and if the floves in which they are kept were high enough to admit them, they would, according to appearance, rife to twice that height. Some of these ems are as large as a man's wrift, But in general as big as walking-flicks, and when dried are as fit for that purpose as those which are im-

ported. The leaves of this fort are much broader than those of the fifth, particularly at their bafe; thefe lea are generally put round the tea-chefts in their package, and are fastened to-gether so as to form a kind of mat. The fifth fort is more rare at present

in Europe, though it is more common on the coaft of Malabar,

They are both tender plants, fo will not live in this country, unless they are preserved in a warm stove; and as their roots spread very wide, so they should not be confined: therefore, to have them produce strong stems, they must be planted in large tubs, filled with rich earth, and plunged into the tan-bed in the bark-stove; and as they naturally grow in marshy low places, fo they require plenty of water, espe-cially when the roots have filled the tubs in which they were planted. When the tubs decay, the boards may be removed, and the plants permitted to root into the tan, which will encourage them to grow to a larger fize; but then there must be care taken, when the bed is refreshed with new tan, to leave a sufficient quantity of old tan about the roots of the plants; for if they are too much bared, and for if they are too much bared, and the new tan laid near them, when that heats, it will fcorch their roots, fo that the plants are fometimes destroyed by it.

The fixth fort is what the Turks make their writing pens withal; this grows in a valley near mount Athos, as also on the banks of the river Jordan. This fort may be managed as

the Bamboo.

The best method of destroying reeds is by draining the land; for if the drains be cut deeper than their roots, it will take away their nourishment, and consequently destroy them. Ashes, or foot, will likewise kill them; and fo will ploughing up the land, and laying it in high ridges. They always indicate a good foil, for a bad one will not nourish them.

REEK. See Rick.

REY-GRASS, A hardy fort of grafs, much efteemed among the farmers for that quality. It will grow on any land, and therefore produces crops where nothing else will. It thrives best of all on sour, clayey, and weeping grounds, and equally endures the feverest droughts of summer, and frosts of winter, suffering no damage from either. It is the best of all winter foods for cattle, the shorter it is eaten the better, and it springs the earliest of any. There is no danger of overstocking it, for if it be left to grow too much, the stalk becomes hard and sticky. It is best for horses and for sheep, and very much prevents the rotting of the latter. The best way of sowing it is with clover. The common quantity of seed is two bushels to an acre, but three bushels is much better; though in some lands where the clover is likely to succeed very well, they sow eight pounds of clover seed and one bushel of rey-seed to an acre, and this makes a crop that will last seven or eight years.

Some mow it as hay, and thrash it for the seed, which, about London, sells from half-a-crown a bushel to three shillings. Four or five quarters of this feed will be sometimes produced from an acre of the grass. If at any time a field of this grass is found to grow thin, it is only necessary to strew on a bushel of the seed, and roll it with a wooden roller, and the plants rising from this addition will make the whole crop sufficiently thick. Rey-grass has this great advantage, that it kills weeds without any other sown plant; even thisses cannot grow among it. When the rey-grass is cut for hay before perfectly ripe, the hay is better, but the seed will not grow fo well. When the feed is newly thrashed, it must not be laid too thick, for it is very apt to heat and ferment, and the seed will be spoiled.

RHUBARE. [Rheum.] The species are, 1. Rhaphontic, or common rhubarb. 2. Palmated, or true rhubarb. 3. Compact, or Tartarian rhubarb. 4. Undulated rhubarb. 5. Arabian, or currant rhubarb of Mount Libanus.

They are easily propagated by feeds fown in autumn foon after they are ripe, or early in the spring, in any open bed of light earth, and when come up, should be properly thinned to a foot and half distance; the roots will be fit for use in about seven years.

Rhubarb is a mild cathartic, which operates without violence or irritation, and may be given with fafety even to pregnant women and children.

Besides its purgative quality, it is celebrated for an astringent one, by which it strengthens the zone of the stomach and intestines, and proves useful in diarrheze and disorders proceeding from a laxity of the sibres. Rhubarb in substance operates more powerfully as a cathartic than any of the preparations of it. Watery tinctures purge more than the spirituous ones; whilst the latter contain in greater persection the aromatic, astringent, and corroborating virtues of the rhubarb. The dose, when intended as a purgative, is from a scruple to a dram or more.

The Turkey rhubarb is, among us, univerfally preferred to the East-India fort, though this last is for some purposes at least equal to the other. It is manifestly more astringent, but has somewhat less of an aromatic slavour. Tinctures drawn from both with rectified spirit, have nearly the same taste: On distilling off the menstruom, the extract lest from the tuncture of the East-India rhubarb proved considerably the strongest. They are both the produce of the same climate, and probably the roots of the same plant taken up at different seasons, or cared in a different manner.

Monte RHUBARB, A species of dock. RIBWORT. The narrow-leaved

plantane.

RICE. [Oryes.] This grain is greatly cultivated in most of the eastern countries, where it is the chief support of the inhabitants; and great quantities of it are brought into England and other European countries every year, where it is in great enterm for puddings, &c. it being too tender to be produced in these northern countries, without the affistance of artificial heat; but from some feeds which were formerly sent to South-Carolina, there has been great quantities produced; and it is found to succeed as well there as in its native country.

well there as in its native country.

This plant grows upon moift foils, where the ground can be flowed over with water after it is come up; for that whoever would cultivate it in England for curiofity, thould fow the feeds upon a hot-bed; and when the plants all come up, they thould be transplanted into pots, filled with rich light earth, and placed into a hot-bed;

and placed into pans of water, which should be plunged into a hot-bed; and as the water wastes, so it must, from time to time, be renewed again. In July these plants may be set abroad in a warm situation, still preserving the water in the pans, otherwise they will not thrive; and towards the latterend of August they will produce their grain, which will ripen tolerably well, provided the autumn proves savour-

RICK, A pile of corn, hay, firaw, &c. regularly heaped up in the open air, and sheltered from wet. RIDDER, or RIDDLE. A sieve to

RIDGE, the rifing ground left between the furrows in ploughing,

RIDGEs in a horfe's wouth, are wrin-kles or risings of sloth in the roof of the mouth, running across from one fide of the jaw to the other, with fur-

RING-BONE, A hard swelling on the lower part of the pastern of a horse, that generally reaches half round

the fore-part. It has its name from the refemblance to a ring.

It often arifes from frains, &c. and when behind, from putting young horfes too early upon their haunches; for in that attitude a horse throws his whole weight as much, if not more, upon his patterns, than on his hocks.

When it appears diffinely round the passen, and does not run downwards toward the coronet, so as to effect the coffin-joint, it is easily cured; but if it takes its origin from some strain or defect in the joint originally, or if a callofity is found under the round ligament that covers that joint, the cure is generally dubious, and fometimes impracticable; as it is apt to turn to a quittor, and in the end to form an ulcer upon the hoof.

The ring-bones that appear on colts and young horses will often insensibly wear off of themselves, without the help of any application; but when the substance remains, there needs no other remedy besides blistering, unless when by long continuance it is grown to an obstinate hardness, and then it may require both bliftering and firing,

To fire a ring-bone fuccefsfully, let the operation be performed with a thinner instrument than the common

one, and let the lines or razes be ma one, and let the lines or razes be made not above a quarter of an inch distant, croffing them obliquely, fomewhat like a chain; apply a mild bifter over all, and when quite dried ap, the rupture plaifter; and then turn the horse to grass for some time.

RIPPLING of Flax, The operation of taking off.

of taking off the feed from the flax by drawing it through a ripple, or large

comb. See FLAX

ROCKET, [Eruca.] This was formerly much cultivated in gardens for medicinal ufe, and for fallads, but is at prefent less common. In appearance it refembles mustard, but is easily diffinguishable by the smoothness of its leaves, and its disagreeable finell. The feeds have a pungent tafte, of the mustard kind, but weaker; they have long been celebrated as approdifiacs, and may, probably, have in some cases a title to this virtue, in common with other actid plants.

Garden ROCKET, Dame's violet. ROCK-ROSE. See CISTUS.

ROD .- A measure in length containing fixteen feet and a balf, In land meafure, fixteen feet and a half

fquare, Golden Rob. See Golden Rob. ROLLER, A large piece of wood turning on its axis, and drawn over the forface of the ground to break the fmall clods, and render it fmooth and

ROOD, A quantity of land equal to forty square poles or perches, that

is, a quarter of an acre.

ROOP. Hoarfenels.

ROOT, The lower part of a plant, by which it adheres to the earth, and by which it draws its nourithment, and transmits the juices to the other

ROSACEOUS, An epithet applied to such flowers as are composed of several petals or leaves, disposed in a sort of circular form, like those of the rose; of this kind are the flowers of the piony, ranunoulus, &c.

ROSIL, or Refish, Land neither light

nor heavy, being a medium between

fand and clay

ROSE-TREE. [Bofa.] Of this plant e reckoned fourteen different species, are reckoned fourt the varieties of which are fill more

1. The dog rofe, or hip tree. . The

The white rofe, and its varieties. 3. The rod rofe, and its varieties. 4. The hundred-leaved rofe, and its varieties, which include the Mofs, and Provence; 5, Cinnamon rofe, 6. The Alpine rofe, The white role, and its varieties, or virgin rofe, without prickles. 7: Carolina, or Virginia rofe, 8. Applebearing rofe. 9. Burner-leaved rofe, 10. Scotch rofe. 11. Musk rofe, 12. Evergreen musk rofe, 13. The Damask rose. 14. The sweet-brian

All thefe are of the fhrub kind, and all the fourteen kinds deciduous and

The propagation of all the forts is by fuckers, layers, budding, and fome forts by feeds; but fuckers are the most common and expeditious me-thod for propagating most of the

By fuckers. Maft of the rofes fend By luckers. Mattrof the roles lend up many fuckers annually from the root, attaining from one or two to three or four feet in height, or more, in one fummer, and by these the shrubs may be expeditiously propagated in great plenty; they may be taken up in autumn, winter, or early in spring, with some sibres to their bottom; and the second may be alanted on the the ftrongest may be planted out fiv-nally, and the weakest in nussery lines. for a year or two, or longer; they will readily grow, and will most of them produce flowers the following:

When thefe thrubs have grown into large busches, with many fuckers grown up to ftems from the root, the whole may be taken up and flipped, or divided into formany feparate plants, and planted out, as above:

Observe, that as the moss rose, musk

Observe, that as the moss rose, muste rose, apple-bearing rose, and some o-thers, surnish suckers but sparingly, so in default thereof must have recourse

to layers, or budding; particularly for the Mofs Provence.

By Layers. All the forts of thefe plants will grow by layers of theyoung theors; and is an effectual method of propagation, for fuch forts particularly ss sparingly furnish suckers, as the Moss.
Provence, &c., and to obtism plenty of the state for laying, a quantity of the plants should be planted for stools;
which being beautif down low. which being headed down low, they half ar inch deep, either to remain, will throw out plenty of shoots near or for transplantation; though when the ground in summer, for laying in designed to form a fort of hedge of autumn or winter following, by slit or this plant to produce a crop of shoots

twist-laying, they will be rooted by , and fit for trans tion in nursery rows; though some-times the Moss Rose, &c. require two years before they are tolerably well rooted; but of these forts you may alfo try layers of the young tender shoots of the year, layed in summer any time in June, they will probably root a little the same season. Hower, the layers of all forts, after being properly rooted, flould be taken

ing properly rooted, frould be taken up in autumn, and planted in the nurfery, to have a one or two year's growth, or to remain till wanted.

By Budding. This is fometimes practifed in propagating fome choice forts that feldom fend up fuckers, fuch as the Mofs Provence, &c. also, when intended to have two, three, or more different forts of rofe upon the fame tree, for curiofity; working upon the Frankfort, or any other firong shooting rose-stocks raised from suckers.

By Seeds. This is fometimes practifed to try to obtain new varieties; also sometimes for raising some parti-cular permanent species, such as the Canine Role, Burnet - leaved Ro Scotch Rofe, Apple-bearing-rofe, fingle Sweet-Briar, and fuch-others as continue the fame by feedlings; feing them generally in autumn fe after they are ripe, and they will femetimes rife the following fpring, as if not fowed till the fpring for most of the forts are apt to remain till the second year before they rife freely ; fow them however in any bed of lig arth, either in Mallow drills, for all over the furface, covering them half an inch deep; and when the feedlings are a year old, transplant them in:

nursery rows.

Observe, however, that the double leinds, and other particular varieties. the species in general, cannot be eds, fo must always be propagated

by fuckers or layers, &c.

But remark, the common fingle Sweet Briar, when required in any-confiderable quantity should generally be raifed from feed, fowing it in drills

to cut for the supply of markets during the fummer, it is eligible to fow she feed at once in a drill where the

plants are to fland.

Hoffman frongly recommends the flowers of the Damaik Rose as of singular efficacy for raifing the firength, chearing and recruiting the spirits, and allaying pain; which they perform without raifing any heat in the constitution, rather abating it when Damask rofes, befides inordinate. their cordial aromatic virtue, which resides in their volatile parts, have a mildly purgative one, which rethe distillation: This, with a proper quantity of fugar, forms an agreeable laxative fyrap, which has long kept its place in the fhops. The other officinal preparations of this flower are of folutive honey, and the diffilled water, which laft is an ingredient in the musk julep, the confection of ker-mes, and faponaceous lotion, and is used also in making the simple ointment called pomatum.

ROSE-BAY. See OLEANDER.

Dwarf Rost-BAY. [Rhododendron.] There are five species of this plant, two of which are evergreens, all flow-ering in June. They are propagated by lowing the feeds in autumn.

Resz CAMPION. [Agrofiemma,]
The fingle rofe campion has been long
in the gardens, where fometimes it
becomes a troublefome weed. The double fort is now placed in its room, but is only cultivated by parting the

China Rosz. [Hibifcus Chinenfis.] This grows naturally in the East Indies, from whence it has been carried so the West-India islands, and obtained the name of Martinico rofe, The flowers of this plant at the first epening are white, then change to a blushing red, and at their decay turn purple; it is propagated by feeds, and must be treated tenderly.

Gelder Rosz. See GELDER Rosz. Rosz of Jericho. [Anaflotica.] This plant grows naturally in the lands near the borders of the Red Sea, and in many parts of Syria. It is a low an-nual plant, dividing into many irregular woody branches near the root;

out small fingle flowers of a whitiff green colour, composed of four small leaves, placed in form of a cross, like the other plants of this class. Thefe are succeeded by stort wrinkled pods, having four small horns; these open into two cells, in each of which is lodged a fingle brown feed.

It is propagated by feeds fown the

hot-bed.

South-Sea Rosz, OLEANDER,
Rosz-wort, [Rhodiola.] There
are two forts, one growing in Wales,
Yorkshire, and Westmoreland; and
another with smaller roots found on the Alps. They are preferred in gardens for the fake of variety, and are

propagated by parting their roots about the beginning of September.

Rosawood. [Rhodium.] The writers on botany, and the materia medica, are much divided about the lignum rhodium, not only with regard to the plant which affords it, but likewife in their accounts of the drug it-felf, and have described under this name fimples manifestly different. This confusion feems to have arisen from an opinion, that the rhodium and aspalathus are the same; whence different woods brought into Europe for the unknown afpalathus were fold a-

gain by the name of rhodium.

The lignum rhodium of the fhopsis ufually in long crooked pieces full of knots, which when cut appear of a yellow colour like box, with a reddifficalt; the largest, smoothest, most compact, and the deepest coloured pieces, should be chosen; and the small, thin, or pale ones, rejected. The tafte of this wood is lightly bitterish, and somewhat pungent; its smell very fragrant, resembling that of reses; long kept, it feems to lose its fmell; but on cutting, or rubbing one piece against another, it smells as well as at first, Distilled with water, it yields an odoriferous essential oil, in very fmall quantity. Rhodium is at prefent in esteem only upon account of its oil, which is employed as an high and agreeable persume in scenting pomatums, and the like. But if we may reason from analogy, this odoriferous simple might be advantageously at each joint is placed a fingle, oblong, applied to nobler purposes: a tinc-boary leaf, and at the same places come ture of it in rectified spirit of wine,

which contains in a small volume the virtue of a confiderable deal of the wood, bids fair to prove a ferviceable cordial, not inferior perhaps to any thing of this kind,

ROUGHNESS of the Coat. When a horse grows rough in a stable in spite of the usual care, and his heels swell, the following mixture is to be

given him with all his food:

Take a pound of flower of brimfrone, half a pound of turmerick, and a quarter of a pound of crude anti-mony in powder. Sift these together, by which means they will be thorough-ly mixed, and strew a little of it over

and among his victuals.

ROSEMARY. [Rofmarinus.] The name of an odoriferous plant very

common in almost every garden.

Rosemary may be raised from seeds; but it is more commonly and more easily propagated by planting flips or cut-tings of it in a pot of light fresh earth, in the fpring of the year just before its buds begin to open. When these plants have taken toot (till which they must be wa-tered gently from time to time, and shaded if the sun be too powerful) they should be transplanted into the place where they are to remain. This should be done early in September, or the lat-ter end of March; but in whatever lea-fon they are transplanted, it should not be during a cold drying eafterly wind, because this would soon thrivel up their leaves and kill them. If a few warm fhowers fall foon after they are fet, they will foon take root, and after that they will require no farther care than keeping them free from weeds. The distances between the plants should be full sufficient to allow for their utmost growth, so that they may not touch one another. The growth willbe most lexuriant, especially in the summer, if they are fet in a rich mould: but then they will be most subject to be injured by frolls; nor will their odour be near fo ftrongly aromatic, as

when raifed on a poor gravelly foil.

Rofemary is a native of Spain, Haly, and the fouthern parts of France, where it grows in great abundance in dry gravelly foils. It has a fragrant intell, and a warm pungent bitterish taste; the leaves and render tops are strongest; next to these the cup flower; the flowers themselves are considerably the

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weaker, but most pleasant. Agaeous liquors extract great share of its virtues by insusion, and elevate them in distillation; along with the water arises a confiderable quantity of effential oil, of an agreeable strong penetrating smell, Pure spirit extracts in great persection the whole aromatic flavour of the rosemary, and elevates very little of it in diftillation; hence the refinous mais, left upon abstracting the spirit, proves an elegant aromatic, very rich in the pecu-liar qualities of the plant. ROT. A difease incident to theep,

arifing frequently from wet featons,

and too moilt pasture.

"But the rot in theep," fays an in-genious and practical writer, " does not always proceed either from moifture alone, or the nature of the foil alone; for all moift grounds do not cause the rot in sheep, and there are some lands which rot sheep in wet years only.

" The rot, in fact, arifes from a certain putrefaction, both in the air, and in the grafs or herbs that ofually grow in fuch moift years: thefe, together with their moift food, corrupt their livers, and bring on the difeafe.

"It is indeed very difficult to cure this diforder, unless it is attempted before the liver is too much wasted: where there is a convenience of doing it, the best remedy is an immediate removal to fait-marihes; but this not being in every farmer's power, I shall endeavour, from my own experience, to supply the deficiency.

"In such cases as these, a preven-tion of the evil is to be recommended to

tion of the evilis to be recomm

the practice of every rational farmer.

"Some grounds naturally yield a foft, fpungy grafs, which is, more than any other, subject to breed the rot in sheep; I would therefore advise, that other cattle be fed in these grounds, and the sheep kept in the drieft, hardest, and healthisst pastures.

"I have known land that has kept theep in health for many fucceffive years, yet afterwards, when the months of May and June have proved wet, a frim and frothy grafs has fuddenly fprung up, which, together with the bad air that muft of course follow, has caused a rot in the sheep that has caused a rot in the sheep that were then on it; the evil was observed in time, the theep were removed to a dry and almost barren heath, and in the fucceeding winter they were foddered with good, dry, fweet hay, and

a great loss was prevented.
"This unwholesome grass is most apt to grow in cold land, and in the fummer-time; and it is a general opi-nion, and well founded on experience, that if the fummer does not rot sheep, the winter will not, the power of the winter alone not being strong enough

to begin a rot.

"A very fensible writer, whose book I have just turned to, I mean Mr. Lifle, fays, that broom is very good for the rot; and indeed I have often experienced it, for in a farm I occupied some years ago there were feveral broom-fields, and I have often observed that such of my sheep as were part of the year fed in them were never infected with the rot, whilft others in my poffession had it to a great degree. I profited however by experience, for I took care thenceforward that all my sheep should, by turns, enjoy the advantages to be derived from their feeding on the young fhoots of the broom.

" As to what Mr. Lifle fays, on the authority of Mr. Ray, that the marsh-trefoil will cure the rot, I cannot, from experience, corroborate it: I have heard its efficacy in this disorder often mentioned, but never yet heard any particular fact related fo circumstantially as to induce me to depend on

" That falt is good, I agree with the above gentleman, and Mr. Boyle; and this gives me an opportunity of communicating a receipt which I

know to be a good one

" When you perceive by the colour of your sheep's eyes, that the rot has taken them, drive your flock into a barn, a covered fold, or fome fuch convenient place; around this place let there be wooden troughs, like mangers, in which you should feed your fneep with good, dry, clean oats, for forty-eight hours; then have ready fome hay falt finely powdered and fear-ced, of which you are to fprinkle a little among the oats, increasing the quantity till it disgues the sheep, and you perceive they fall off their appe-tites; afterwards, for the two following days, give them again clean oats;

and then mix your falt with them as before, continuing this process till their eyes have recovered their natural colour, when you will find them per-fectly cured; and to be convinced, it will only be necessary to kill one or

two out of the flock.
"To this I shall add a receipt for the rot in fheep, which was commu-nicated to me by a friend, a man of credit and veracity, who fays he has

often tried it with success.

"Steep fome regulus of anti-mony in ale, adding thereto fome grains of paradife, and a little fugar to sweeten it. Of this infusion somewhat less than a gill is to be given to e-very one of your affected sheep; they are to have two or three doles, according as they are more or less affected by the distemper, allowing two days in-termiffion between each dofe."
"This is faid, as I have already

observed, to be a cure almost certain.

" I just now take notice, that when rain falls in the months of May and June it is apt to cause the rot in the it will be necessary to add, that folding them in the above months increases the disorder; for after having been deprived of their liberty during the whole night, they bite the noxious grafs the more greedily in the morning, having less ceremony in their choice of herbs than if they were not folded. This is a matter of some confequence, therefore worthy of being attended to attended to

" One thing more I must, on the authority of Mr. Lifle, communicate to your readers, viz. an observation of a Leicestershire farmer, that sheep, when first touched with the rot, will thrive mightily in fatting for ten weeks, but if they are not disposed of when they are come up to a pitch, they will, in seven or eight days time, fall away to nothing but skin and bone. The fame farmer observed, that he had often had them die in the height of their pitch, in half an hour's time, with twenty-seven pounds of tallow in their bellies." Museum Rusticum,

vol. i. page 434.

To this account we shall add a receipt communicated to Mr. Mills by

a gentleman of Lincolnshire,

Steep a handful of rue in a pail of water all night, and at morning put in as much falt as will make it bear an egg. Give each sheep half a pint of this liquor, and repeat it thrice, every other morning.

" A farmer who kept four hundred theep tried this receipt in the last general rot (about fourteen years ago) and did not lose any, though his neighbours loft almost all theirs. For the fake of the experiment, he fet apart about twenty, and did not give them this drink. Many of these were

ROUP. The name of a filthy difease in poultry, confisting of a boil or fwelling upon the rump, and is known by the staring or turning back of the

The roup, if not foon remedied, will corrupt the whole body of the fowl; to prevent which, the feathers should be plucked away, the swelling laid open, and the matter pressed out; after which, the part is to be washed with brine, or salt and water.

ROWEL. A kind of iffue made in

horses for the cure of various diforders, as inward strains, hard fwellings, &c.

The operation is performed in the following manner:

A little flit being made through the Ikin, about a hand-breadth below the part aggrieved, big enough to put a fwan's quill in, the fkin is raifed from the flesh, the end of the quill put in, and the skin blowed from the flesh upwards, and all over the shoulder; then the hole being stopped with the finger, the part blown is beat with a hazle-flick, and the wind spread with the hand all over, and then let go; this done, a skain of horse-hair, or red farfenet, half the thickness of the lit-tle finger, is put in a rowelling needle, feven or eight inches long, and the needle is put into the hole, and drawn through again, fix or feven inches higher; then the needle is drawn out, and the two ends of the rowel tied together, anointing it every day, as well as before the putting it in, with fweet butter, and hog's greafe, and drawing it backwards and forwards in the ikin, to make the putrid matter dicharge itself more plentifully,

RUE. [Rata.] This is a fmall thrubby plant, met with in gardens, where it flowers in June, and holds its green leaves all the winter: we frequently find in the markets a narrow-leaved fort, which is cultivated by fome in preference to the other, on account of its leaves appearing variegated during the winter, with white

Rue has a strong ungrateful smell, and a bitterift, penetrating tafte; the leaves, when in full vigour, are ex-tremely acrid, infomuch as to inflame and blifter the fkin, if much handled. With regard to their medicinal virtues, they are powerfully fimulating, attenuating, and detergent; and hence, in cold phlegmatic habits, they quicken the circulation, diffolve tenacious juices, open obstructions of the excretory glands, and promote the fluid fecretions. The writers on the materia medica in general have entertained a very high opinion of the virtues of this plant, Boerhaave is full of its praises, particularly of the effential oll, and the distilled water cohobated, or re-distilled several times from fresh parcels of the herb: After fomewhat extravagantly/commending other waters prepared in this manner, he adds, with regard to that of rue, that the greatest commendations he can bestow upon it fall short of its merit, " What medicine (fays he) can be more effic cious for promoting sweat and perspi-ration, for the cure of the hysteric passion, and of epilesies, and for ex-pelling possion?" Whatever service pelling poison?" Whatever service rue may be of in the two last cases, it undoubtedly has its use in the others; the cohobated water, however, is not the most efficacious preparation of it. An extract made by rectified spirit contains, in a small compass, the whole virtues of the rue; this menstruum taking up by insustant all the pungency and flavour of the plant, and elevating nothing in distillation. With water, its peculiar flavour and warmth arise; the bitterness, and a considerable share of the pungency remaining behind. remaining behind.

Deg's Rux. There are several species of this plant cultivated in gardens for variety, all propagated by feeds, or by planting flips or cuttings.

Dog's Ruz. Figwort,

NAZ

Goat?

Geat's RUE. See GOAT'S RUE. Meadow Ruz. See MEADOW RUE, Wall RUE. See WHITE ZAIDEN. HAIR.

Syrian Ruz. [Peganum.] This plant is a native of Syria and Spain, and the stalks decay every autumn, but the roots are perennial. It is propagated by feeds fown the beginning of April, requires a warm fituation, and dry foil.

RUPTURE-WORT. [Herniaria.]

This is a low herb growing wild in

fandy and gravelly grounds. It is a very mild reftringent, and may, in fome degree, be ferviceable in difor-ders proceeding from a weak flaceid flate of the vifcera; The virtue which it has been most celebrated for, it has

little title to, that of curing hernias.

RUSH. [Juneus.] Rushes grow on moist, strong, uncultivated lands in most parts of England, and consume the herbage where they are suffered to remain. The best method of destroy-ing these rushes is, to fork them up clean by the roots in July, and after having let them lie a fortnight or three weeks to dry, lay them in heaps and burn them gently, and the aftes which thefe afford will be tolerable manure for the land; but in order to prevent their growing again, and to make the pasture good, the land should be drained, otherwise there will be no destroying these rushes entirely; but after it is well drained, if the roots are annually drawn up, and the ground kept duly rolled, they may be subdued. Lime is a good manure for rufhy land, as likewife wood-after from a limekiln.

Flowering Russ. [Butomus.] There are two varieties of this plant, one with a rose-coloured flower, and the other with a white flower; but these are only accidental variations, therefore not to be enumerated as diffind

The rofe-coloured fort is pretty common in flanding waters in many parts of England; the other is a variety of this, though less common with us near London. These plants may be propagated in boggy places, or by planting them in citterns, which should be kept filled with water, that should have about a foot thickness of earth in the bottom, into which the roots thould be planted, or the feed fown as

foon as they are ripe; thefe, though common plants, yet produce very pretty flowers, and are worth propagating for variety's fake, especially if in any part of the garden there should be conveniency for an artificial bog, or where there are ponds of flanding water, as is many times the cafe, and persons are at a loss what to plant in

fuch places that may appear beautiful.

Sweet-feented Russ. [Juncus Odorav
tus.] This is a dry fmooth flalk, brought to us along with the leaves, and fometimes the flowers, from Tur-key and Arabia, tied up in bundles about a foot long. The stalk, in shape and colour, fomewhat refembles a barley-ftraw; it is full of a fungous pith, like those of our common rushes; the leaves are like those of wheat, and furround the stalk with feveral coats, as in the reed; the flowers are of a carnation colour, friped with a lighter purple. The whole plant, when in perfection, has a hot bitterish, not unpleafant, aromatic taffe; and a very fragrant smell; by long keeping, it loses greatly of its aromatic flavour. Distilled with water, it yields a confiderable quantity of essential oil. It was formerly often used as an aromatic, and in obstructions of the viscera, &c. but at prefent is scarce otherwise employed than as an ingredient in mithridate and theriaca.

RUST in corn. Mildew.
RYE, [Secale.] Rye has been generally thought the next best bread-corn to wheat, and accordingly was formerly very much used for that purpole, and is to still in fome places; fometimes alone, but then it has a peculiar sweetness, which is generally disagreeable to those who are not used to it, and subjects many to cholicks and loofenesses, and the bread made of it is black and heavy.

But a small quantity of it was for-merly, and still is in several places, of bread, on account of its keeping mixed with wheat in the making the bread moift, and then is attende with no ill confequences, but is rather thought to render the wheat more tender, fresh, and agreeable to the tafte; And it was the more cultivated on account of its being the product of barren, gravelly, fandy land, which was then thought capable of produ-

cing nothing elfe, or very little worth

The common or winter rye requires a fummer's fallow, and more expense and trouble in the management of it, than it is found to answer well; since the great improvements made of those dry fandy foils proper for it, by the advantages made of fuch fort of foils, by the fowing of turnips, and several artificial graffes, and the great profit made by them; and from the several species of corn, they give the farmer an opportunity of raising much more advantageous crops than rye; this must, of course, fink it in the husbandman's esteem, and make it in general to be much less regarded.

There are two forts of rye.

First, The common or winter rye.

Second, The leffer or spring rye.

The first fort is what is usually pro-

The first fort is what is usually propagated amongst us, and generally on such dry barren land as is above-mentioned, where better cornwill not grow.

The second fort, or small rye, is to be sown in the spring, about the same time when oats are. It is apt to run into straw if it prove a wet season, and this fort is generally lighter than the other; however, is may be very conveniently used where wheat or other autumn crops have miscarried.

Two bushels are commonly allowed for feed to an acre, and four loads generally reckoned a middling crop; and it usually carries equal price with barder, and about one half theorice of wheat

it usually carries equal price with barley, and about one half the price of wheat In feveral places they fow rye together with wheat on the fame ground, and then it is called Maslen, that is, Miscellane, and will then bear a price in proportion to the quantity of wheat which is mixed with it.

The best judges think this fort of husbandry to be a very ill one, since as the rye is ripe before the wheat, and must stand till they are cut together, the consequence must necessarily be, that the rye will shed a good deal of its grain; and what is more, the grains when so mixed seldom make a bread that those persons can well bear, who have been used to wheat. But the rye producing a spirit, it is now said to be much used for that purpose, and so far may save the wheat; though we doubt such a use of it will prove of no advantage to our country,

Rye is a quick grower, and for that reason the common fort, as well as the other, sometimes is sowed in spring, when wheat miscarries, and has answered expectation; and the smaller ryo (as before-mentioned) is very proper for this purpose, as it is usually ripe at the common times of harvest. The common fort is sometimes sowed so late, in order to be ploughed in to sertilize the ground for a better species of grain.

But there is another more beneficial prospect of sowing it in autumn, which is, in order to provide suod for ewes and lambs in the spring, when turnips and coleseed are gone, or have sailed, and before any other forts of grasses are grown to support them; and it may be sowed for this purpose either on land prepared particularly for this end, or on the wheat land after the corn is carried off, or on other stubbles when ploughed up, or where turnips have failed, and will probably answer expectation whichever method of management is taken with it for this purpose.

It is certainly the best proof of a man's being a good farmer, when he is known to provide proper and sufficient food for his cattle and sheep for the whole year in general, and also has a further particular view for a second provision for his ewes and lambs, in case any of the former intended

forts should miscarry.

All this he may certainly generally do, if he will but carefully confider the several respective times. The common natural, and the several artificial graffes, or turnips, &c. will common at the latter end of the year; and also when he may expect any of them to come in to his affiltance in the spring; and then think of, and provide such other supports for them in the time. None of them are to be had in the offual course of things, by sowing either turnips, rye, or colesed, by the help of one or other of which (with God's bleffing) he need not much sear but he may have a plentiful provision for his stock all the year round.

It is for want of this knowledge and care to provide greens and graffes for their sheep in the winter and the spring, that in many places in the north they are obliged to prevent their ewes from having lambs, till they have natural grafs on the ground to help them to milk to support them, which is often not till the end of April, and fometimes not till the beginning of May; and then they are ebliged to eat their best mowing grounds sometimes to the twentieth of May, before they can turn their sheep to the commons, and save their grounds for hay. If a day time then succeeds, these grounds are burnt up, and their expected product of hay from their best land, wholly, or in a great measure, destroyed; to the exceeding difadvantage of the farmers, and sometimes to their ruin.

And why may not rye be fowed for the purposes above-mentioned amongst surnips, and answer the farmer's expectation, especially as the ground on which turnips are commonly fowed, is generally better prepared, and usually of a better nature, and in much better heart than the land commonly allotted for the growth of rye; especially where turnips are sowed after the drill manner.

In plentiful years rye may be given to fowl, or hogs, which last delight in it, and will seed very well on it when ground, and made into a passe, but then they should always have water, and also a few beans or pease at the last, to harden their fat, which is commonly very beneficial in most methods of feeding them.

This grain is very subject to grow in the ear, if any wet comes to it; and it will be soon damaged if any green weeds are mixed with it, so that particular care must be taken of it in both these respects, to let it have time in the field, to prevent the weeds making it to give in the barn, which will make the corn musty, and therefore it should be housed dry, and that as soon as ever you can get it so.

The keeping it in the chaff, on a dry floor, is advised for the preferving it sweet after it is thrashed; the dry chaff imbibing any moisture which may happen. This method has been mentioned for preserving wheat, and is useful in several other grains.

RYE-GRASS. See REY-GRASS.

S.

SAF-FLOWER. [Carthamas.] Baftard faffron is cultivated for the fake of the flower, as the faffron is; and probably the culture of faffron gave rife to this article, for its flower is used to some of the same purposes, and is called for that reason bastard faffron.

The plant however is utterly unlike faffron; it is a kind of thiftle, and wherever it grows, whether wild or cultivated, it has very much the ap-

pearance of a weed.

It is an annual plant. The stake is sturdy, robust, and four feet high. The leaves are large and broad, not divided or indented, but befet with priekles at the edges; the slowers grow at the tops of the branches, into which the main stalk divides towards its upper part; and are a kind of large scaly heads, somewhat resembling those of our thistles, with a great

quantity of threads iffuing out at their tops. These threads are of a most bright and beautiful yellow, and have been supposed by some to resemble the blades in the slower of saffron; but there is not much likeness. It is for the sake of these the plant is cultivated principally, though the seeds are also an article in trade. The root is white and long, and it perishes as soon as the seeds are ripened. Its first shoot when sown, is in certain large broad leaves, but these perish when the stalk rises.

The flower of the Carthamus, examined more accurately, is found to be contained in a large common cup; this ferves for the feveral flowers of which the whole tuft is composed, and forms what we call the head of the Carthamus. It is of an oval form, and is composed of a great number of scales placed like tiles one over ano-

ther.

ther, and they have each the addition of a kind of little leaf of an oval form. The whole tuft is composed of feveral tubelar flowers, each is formed of a fingle leaf, and has the hollow narrowest at the base, and wider all the way to the mouth, where it is divided into five little, and nearly equal fegments,

In this flower rife five fhort filaments, and at the tops of them fland fo many buttons, which are of a cy-lindrick form, and oblong.

In the base of the flower is deposited the rudiment of the fruit; this is very small and short; from its top there rises a kind of filament longer than the others. This is the part to which the three blades grow in the flower of the right faffron; but in this it is terminated only by a plain little head, which ferves to receive the dust from the heads of the short fila-

ments to impregnate the feed.

When the whole tender part of the flower is faded, the fealy head remains, and contains the feeds. One follows

every flower,

Several other species have been added to this, and called by the same name, one with blue flowers, and others with divided leaves; but the true and proper plant to be raifed for use is that here described.

It is a native of Egypt, and feveral parts of the east; and is cultivated in many of the warmer parts of Europe; it thrives also very well in England.

The principal place where we have feen it in England, is in fome parts of Norfolk; but, if worth while, it might be raifed in any other part of the

kingdom.

Those who shall thinkit worth while to raife it, must observe the following directions: In the first place, let the farmer take care to have the seeds from abroad; and as often as he fows it et him get fresh ones, for they do not sipen well in England. These may be had at a very small expence, and with little trouble. The druggists fell them, but theirs are not to be used, for they are commonly old. But such a quantity of it is raised every year in Germany, that good seed may always be

When the feed is procured, the fecond care is the ground. The best foll is a dry loam, and it does not require a rich piece of land of this kind, fo that the charge of this article is not great, nor indeed in any other.

The feeds are to be fown by hand in a sparing manner on the land in spring, and to be harrowed in. When they have faot, and the plants haw fome strength, they are to be thinned. Hoers should be sent into the field for this purpose, and they should have ora-ders not only to cut up what weeks have risen, but to thin the plants themfelves, leaving them about a foot diftant, and faving fuch as appear the ftrongest and most thriving. From this time no farther care need be taken of them; they will grow quick, and being strong plants, and thus near to one another, no weeds will be able to get nourishment among them. Early in autumn they will begin to flower; and then the field will make a beautiful appearance; there is nothing can exceed the brightness and golden has of the flowers, nor have we any thing of our own growth that comes no The plants branch out & wards the top, and the upper part of every branch is loaded with flowers. fo that the whole field is covered, and as it were gilded with them.

The gathering of these flowers in far refembles that of faffron, that they are to be taken as they open; for it left for feveral days together, they will lofe their colour, and that is in a man-

per their whole value.

For this reason as soon as there is any number of them open, the pickers, who are in this article the gatherers. alfo, are to be feat into the field. The flowers are not gathered there and picked afterwards, but the whole bu-finess is done at once. The whole tender part of the flower is to be taken, leaving the fealy bud. When those which are open are thus carefully picked off, they are to be spread upon a large floor in an airy place out of the sun to be done to them.

When they are dried in this manner, they look of as beautiful a colour as while growing, and they are ready for fale without farther care or trouble.

Every day or two the pickers are to be then fent into the field as at first, to gather the flowers as they flew the

felves, and this is to be the method fill the whole quantity are blown; one parcel being put to dry after another. The whole parcel being thus prepared by a simple and natural drying, is rea-

dy for the purchaser.

If the season has been savourable, and the crop have flowered early, fome feeds may ripen; but as this is fuch a great uncertainty, there is no dependence upon it; and the better method is to grub up the plants as foon as the flowers are gathered, that the land may be prepared for fome other crop.

The dyers are the people who purchafe the flowers; fome have idly sup-posed they were of the same nature with faffron, because they refembled that drug in some degree in appearance; but it is so far otherwise, that as faffron is a cordial and fweat, thefe flowers are a purge, and the feeds a

We have mentioned the only right and honeft use of the flowers of this plant; but there have been fome, when it was more cultivared than it is at prefent in England, who had a way of mixing it with faffron when they worked it in the drying.

How improper this was we may know from the difference of the virtues of one and the other; but there was another reason why the farmer never should have done this, which is,

that it reduces the price.

The thready part of the Carthamus is narrow, harsh, dry, and paler co-loured than the blades of saffron; therefore no art can fo blend them together, as to make them capable of imposing upon any but the ignorant; it was the inferior fort of faffron made up from the last gatherings that they mixed up in this manner, and it reduced the price of this ftill lower.

One reason why the foreign saffron is held in fo much contempt in England is, that there is too often Car-

thamus among it.

SAFFRON. See CRocus.

Meadow SAFFRON. See MEADOW SAFFRON.

SAGAPENUM. A concrete juice Brought from Alexandria, either in diffinct tears, or run together in large maffes. It is outwardly of a yellowish colour, internally somewhat paler, and clear like horn, grows fost upon being

handled, and flicks to the fingers; its tafte is hot and biting; the finell dif-agreeable, by some resembled to that of a leek, by others to a mixture of

affafætida and galhanum.

Sagapenum is an ufeful aperient and deobstruent; and frequently preferibed either alone, or in conjunction with ammoniacum, or galbanum, for opening obstructions of the viscera, and in hysterical disorders arising from a deficiency of the menstrual purgamonary veffels, and proves of confiderable fervice in some kinds of afthmas, where the lungs are oppressed by viscid phlegm. It is most commodioufly given in the form of pills; from two or three grains to half a dram, may be given every night or oftner, and continued for fome time. When fagapenum is scarce, the druggists usually supply its place with the larger and darker coloured maffes of bdellium, broken into pieces; which are not easily distinguished from it.

SAGE. [Salvia.] Officinal fage, the varieties of which are, The common broad-leaved green fage; the common culinary red fage; the broad-leaved hoary balfamic fage, having the broadeft leaves of all the forts, itanding on long foot-stalks; wormwood fage; narrow-leaved hoary fage, or fage of virtue; lavender-leaved fage; variegated green fage; and variegated red

Sage is most usually propagated by flips, which should be planted about the middle of April in a shady border, and watered if the weather be dry.

There are feveral other fpecies of fage cultivated in gardens for variety, fome of which want the affiftance of the flove and green-house occasionally.

The writers on the materia medica are full of the virtues of fage, and derive its name from its supposed falutary qualities, (Salvia falvatrix, natura conciliatrix—Cur moriatur homo, sui faivia crescit in horts, &c.) Its real effects are, to moderately warm and firengthen the vessels; and hence, in cold phlegmatic habits, it excites appetite, and proves ferviceable in debilities of the nervous lystem. The best preparation for these purposes is an in-fusion of the dry leaves, drank as tea; or a tincture, or extract, made with rectified

reclified fpirit, taken in proper dofes ; these confain the whole virtues of the fage; the diffilled water and effential oil, only its warmth and aromatic quality, without any thing of its roughnefs or bitteriffness. Aqueous infu-fions of the leaves, with the addition of a little lemon juice, prove an ufe-ful diluting drink in febrile diforders, of an elegant colour, and fufficiently acceptable to the palate.

SAGE-TREE. [Phlomis.] A fhrubby evergreen plant, of which there are many (pecies; but four, chiefly cutti-vated in the English gardens. They are all propagated by layers and cut-

Wood SAGE. This grows wild in woods and hedges. In fmell, tafte, and medical virtues, it is more like

foordium than fage. SAGO. The medallary part of the tree is beaten with water, and made into cakes, which are used by the In-dians as bread: These reduced into granules, and dried, are the sago brought to us. It is moderately nutritious, though not perhaps fuperior

to our own grain.
SAINTFOIN, or SAINTONN, the name given by the French, and continued by us, to a species of plant, frequently used for the food of cattle, either fresh or dried; it is called holy-hay, or wholesome hay, from its excellent nutritive quality. 'The thalks of the plant are commonly about two feet long, but they grow formedines to five or fix feet, and it has tufts of red flowers of three, four, or five inches in length.

This plant will make a forty times greater increase in poor ground than the common turf; and this is owing to having a long perpendicular root, of that kind called tap root, which finks to a great depth to attract its nourishment. The length of this root is fearer to be credited by any but those who have seen it; It is frequently drawn out of the ground to the length of twelve or fourteen feet, but it is faid to be often thirty feet or more in length.

The farmers have a general opinion that this plant never fucceeds well in any land where there is not an under fratum of flone, or chalk, or fome Vol. II.

other hard matter, to flop its running; but that otherwise it spends in root, and comes to nothing above ground. This is an error too gross to need much refutation. It is certain, that the roots being to plants what the flomach and guts are to animals, the more and larger fronts any plant has, the more nourishment it receives, and the better it thelies. ter it thrives.

Saintfoin always fucceeds where its roots run deep, and the best crops of all are produced upon lands where there is no hard under foil to obstruct their paffage. An under foil of clay may kill the plants by retaining the water, and chilling and rotting their

The long root of faintfoin has, near the furface, many horizontal roots if-furing from it, which extend them-felves every way; there are of the fame kind all the way down as the roots go, but they grow thorter and thorter all the way. Any dry land may be made to produce this valuable and ufeful plant, though it be ever to poor, but the richest and best land will produce the best crops of it, The best way of sowing it is by drill-ing, but the earth must be very well prepared, and the feed well ordered, prepared, and the feed well ordered, or elfe very little of it will grow. The heads of these seeds are so large, and their necks so weak, that, if they be much more than half an inch deep, they are not able to rise through the incumbent mould; and, if they are not covered, they will be malted, as the farmers express it; that is, it will send out its root while it lies aboveground, and be killed by the air; and whether the farmer plants bad seed that will not grow, or good seed that is buried or matted, the event will be the same. The ground will be underflocked with plants, A bushed of seed to each square soot of land; but as there is some difference in the largemes of the seeds, there is no absolute ness of the feeds, there is no absolute certainty as to this calculation. The worst feasing of winter, and the drought of summer; the beginning of the fpring; and it is always firong-eft when planted alone, and is rot fown together with corn, as is the practice of fome farmers. If barley,

pats .

oats, or any other corn, fown with the faintfoin, happen to be lodged afterwards, it kills the young faintfoin. If it be planted with any other corn, it is best done by drilling in the horse-hoeing way; in this case it is not much liable to be killed by the lodging of the corn, as the drilled corn feldom falls at all, and when it does, never falls fo low as the fown corn.

The quantity of feed to be drilled upon an acre of land will depend wholly upon the goodness of it; for there is some seed of which not one in ten will strike, whereas in good seed not one in ten will fail. The method of knowing the goodness is, by sowing a certain number of the feeds, and feeing how many plants are produced by them. The external figns of the feeds being good are, that the hufk is of a bright colour, and the kernel plump, of a light grey or blue colour, and fometimes of a fhining black. The feed may be good, though the husk be black, as that is owing sometimes to the letting it receive the wet in the field, not to its being half-rot-

ted in the heap.

If the kernel be cut a-cross, and appear greenish and fresh, it is a certain fign that it is good. If it be of a yellowish colour, and friable, and look thin and pitted, they are bad figns. The quantity of feeds allowed to the acre in the drill way is much less than that by fowing, and is to be computed according to the number of plants that are to be allowed in that space, allowing for the common casualties. It is not necessary to be exact in this calcu-lation, or to say whether two, three, or four hundred plants are to be allowed to a fquare perch; neither is it possible to know before-hand the precife number of plants that may live out of those that come up; for sometimes the grub takes them when they have only the two first leaves, and the crop is greatly diminished by this means. Four callons of good feed to means. Four gallons of good feed to an acre of land will cover it with plants, when judiciously managed. Single plants of faintfoin make the

greatest crops; but the farmers in general plant them so close, that they starve one another. The fingle plants always run the deepest, and those which do so will always draw most

The plants which nourishment. stand crowded starve one another, and often die after a few years; but the fingle ones grow to a vaft bigness, and

are every year better and better.

The bett way to calculate how many plants are to be allowed to a perch, is to compute how much hay each fingle large plant will produce; for if kept fingle and well cultivated, they will all be large ones. Without culture, these plants never arrive at a fourth part of the fize that they do with it. The hay of a large fingle cultivated plant will weigh more than half a pound; a hundred and twelve plants upon a square perch, weighing but a quarter of a pound a piece, one with another, amount to two tons to an acre. If faintfoin be planted on some forts of land early in the spring and hoed, it will fometimes produce a crop the following fummer; in a garden the feeds fown in February will yield plants of two feet high that will flower in the month of June following; and though March be frosty, the young plants feldom suffer by it. This shews plants feldom fuffer by it, that this plant is naturally a quick grower; but the farmers usually plant to on poor or cold land, and give it too little culture, which makes it backward, and flow of growth with them. The poor land, usually allotted to this plant, also makes it generally yield but one crop a year, but on a rich land it will yield two very good crops approally with a moderate good crops annually, with a moderate thare of culture and management.

The farmer who expects to make a profit of this plant must not expect a good crop the first year. Nothing is so injurious to saintsoin as its standing too thick: if it be so thick as to cover the ground the first summer, the plants will starve one another for ever after; but if the owner will be content to place them fo thinly as to have but a small crop the first year, they will increase prodigiously, and every succeeding crop will be better and better. When saintsoin is well hoed, it will grow as much in a fortnight as it would otherwise do in fix weeks; and this quick growing is of advantage to it every way, not only making the plants large, but of better nourishment to the cattle, whether they are eaten green or made into hay.

The proper distance to drill this plant for the horse-hoeing husbandry is at double rows with eight-inch partitions between them, and thirty-inch intervals between every two and two. These intervals need only be hoed alternately, leaving every other interval for making the hay on. This method of hoeing is of vast advantage, and poor land by means of it will always produce two crops a year. The land is always to be perfectly cleared of grass before the sowing the saintsoin, and the lumps of earth carefully broken. But no harrowing is to be allowed after it is drilled, for that would bury it; and it is not proper to roll it at all, unless for the sake of barley, when they are sown together; and when that is done, it should be with a light roller, and in dry weather. This should be done lengthwise of the rows, and as soon as it is drilled; if it is not done at this time it is best to stay three weeks before it is done, that the necks of the young saintsoin may not be broken.

No cattle are to be suffered to come in the first winter upon the faintsoin, after the corn is out among which it was sown. Their feet would injure it by treading the ground hard, as much as their mouths by cropping it, and it would never come to good. Sheep should not be suffered to come at it, even the following summer and winter. One acre of drilled saintsoin, considering the difference of the quantity and goodness of the crop, is worth two acres of sown saintsoin on the same land, though the expence of drilling be twenty times less than that of sowing. The first winter is the time to lay on manure after the corn is reaped off. Pot ashes, or the like, are very proper, and a small quantity of them will do, as there are at this time no other plants to partake of the benefit, but the young crop has it all, and the young plants being thus made strong at first, will continue so, and be long the better for it.

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It is observed, however, that in the
drilling and horse-hoeing way, there is
no necessity for any manure at all.
Some sarmers sow eight or ten bushels
of the seed of saintsoin to an acre along
with their corn, with intent that it

should kill all the other weeds; but the consequence is, that the plants stand close, and starve one another, and are no bigger than where the plant grows wild on the hills in Calabria, where it is so small and seemingly despicable a plant, that it seems a wonder that any body should be tempted to think of cultivating it; yet, when rightly managed, it seems capable of being as useful a plant as any in the world. Where these plants stand so think they draw all the nourishment from the ground in a sew years, and so die, though manured ever so carefully. Six or seven years seem their greatest duration; whereas, when the seed is drilled in, and the plants are horse-hoed, they will be as strong and vigorous as ever at 30 years standing.

Some people who have turned their thoughts to husbandry, have been of opinion, that the cytifus would fucceed better with us than faintfoin; it is probable enough that it would grow well; but the labour of sheering it would, with us, where the pay of fervants is so dear, run away with the

profits of the crop.

Lucerne is another thing which many have thought of introducing among us in the place of faintfoin, but it requires fo much care to fuit it with a proper foil, that, whatever are the profits of it, it never can be so general

s faintfoin.

Saintfoin, fays Mr. Duhamel, deferves the farmer's utmost attention, as one of the most profitable plants he can cultivate. It will do on almost any land; and though it succeeds best in good soils, yet it will grow even on dry barren spots where scarce any other grass can live, provided its roots be not chilled by a cold clay, or other substance which retains water; and it has this farther advantage, that it may be mowed at different degrees of ripeness, with nearly the same profit.

ness, with nearly the same profit.

1. It may be mowed before it is in bloom, for it is then admirable food for horned cattle; and when cut thus early, it yields a second crop, which makes ample amends for what was lost by not letting the first come to its full growth. This early cutting is likewise attended with another benefit, which is, that it purges cattle in the Oo 2

beginning of the fummer, and thereby frees them from diforders occasioned by the winter's cold, or dry food. 2. If the weather be rainy, the faintfoin may be left standing till it is

in bloom; when it ftill is excellent fodder for cows, But care must be taken in making it into bay, that the flowers do not drop off, as they are very apt to do : for cattle are fo fond of these flowers that they often induce them to eat the rest of the plant.

3. If the rain continues, the faint-foin may be left flanding till fome of its feeds are formed, and the crop will then be the more plentiful, not only because it will have attained its full growth, but likewife because its leaves being more substantial, diminish less in drying. It is not indeed, then, quite fo fweet as before; but horses eat it readily, because they love to feel between their teeth the feeds, which now

begin to be formed? Mr. Tull fays, this fodder is fo ex-cellent, that horses need no oats when they are fed withit. He affirms, that he kept a team of horfes with it a whole year in good plight, without giving them any oats, though they were worked hard all the time. He adds, that he fattened sheep with it in less time than others which were fed with corn. But the hay of this plant can never be fo good as when it is cultivated with the horfe-hoe; for in the common husbandry, it blossoms almost

as foon as it is out of the ground. 4. If the feafon continues rainy, it may be more adviseable to let the faintfoin remain standing, than to run the hazard of having it rot upon the ground; for then the feed will ripen, and nearly make up for the lofs of the fodder; not only because it will fetch a good price, but also because two bullels of it will go as far in feeding of horses, as three bulhels of oats; and cattle in general, as well as poultry, are extremely fond of it.

The first of these forts of faintsoin

hay, cut before the bloom, is Mr. Tull's virgin hay, which, he fays, is the best beyond comparison, and has not its equal in the world except su-cerne. He gives the next place to the second fort, cut whilst in bloom, and fays that an acre of land, well cultivated, may yield three tons of this

bloffomed hay; and he effects the third fort, which he calls the fullgrown, many degrees inferior to either of the former; though it yields a greater crop, because it has grown to its full bulk, and thrinks but little indrying,

Even the faintfoin that has yielded. its feed may be cut down and dried; and when other fodder is feares, this will be better food for borfes and large cattle, than the coarfe hay of flowed meadows, or any kind of ftraw.

The manner of making faintfoin hay is thus directed by Mt. Duhamel.

In a day or two after the faintfoin has been mowed, it will be dry on the upper fide if the weather be good. The fwarths, or mowed rows, should. then be turned, not fingly, but two and two together; for by thus turning them in pairs, double the space of ground is left betwixt pair and pair, and this needs but once raking, whereas, if the fwarths were turned fingly, that is, all the fame way, the ground would require as much raking again. As foon as both fides of the fwarths

are a little dry, they fbould be made up into small cocks, the fame day, they up into imail cocks, the tame day, they are turned, if possible; for when the faintsoin is in cock, a less part of it will be exposed to the injuries of the night, than when it lies scattered upon the field. The sun and dew would exhaust almost all its juices in this last case, in less than a week's time.

These littly cocks of faintsoin may he fally made into lesser ones, with

be fafely made into larger ones, without waiting for their being so tho-roughly dry as those of common hay ought to be before they are laid toge-ther; because common hay, by finkther; because common bay, by sinking down closer, excludes the air necessary for keeping it sweet; so that if the weather prevents its being frequently stirred and opened, it will heat, turn yellow, and be spoiled; whereas faintsoin, by admitting the air more freely, because its stalks are less stexible, will remain much longer without any danger of fermenting.

Saintsoin hay is never bester than when it has been dried by the wind only, without the affistance of the sun. A little rain, or a mist, which will turn common hay or cloves, and even lucerne black, will do no hurt to faint-folo, which is not really spoiled till is

foln, which is not really spoiled till it

cots upon the ground. If the weather threatens rain, and the faintfoin is not yet dry, it may be laid in cocks, with cut fear of its heating, provided a large backet, or bully faggot, be feb up in the middle of each cook, where it will farse for a vent-hole; through which the superfluous moisture of the hay will transpire.

As foon as all danger of heating is: over, their cocks should be made into ricks, and that held. That which is laid up quite day, will come out of the rick of a green colours that which has heated much in the rick, will look

In requires fome experience to know at what degree of ripencials is best to cut the feeded friesteding terroit all its feeds do not air about the feeds do not air about the feed do not air about the feed the since; some carrellalings before others; eat what degree of a its feeds do not also before, others; every ear begins blotheming at its lower part, and continues to blow gradually upward, for many days; fo that before the flower is gone off at the top the feeds are already filled at the bottom. By this means if the currier tom. By this means, if the cuttings be deferred till the top feeds are quite ripe, the lower, which are the beft; would fed and be loft. The best time, therefore, to cut it, is when let the hay get wet, because it would the greatest part of the seed is well then be spoiled.

A very important, and at the same blown beginning to be full. The unripe feeds wilbripen after cutting, and ing of the feed that has been thrafted be in all respects as good as those that in the field; without ever having been were ripe before. Some for want of wetted, If it be winnewed immedofering this, have suffered these diately, and only a little of it faid as

the rake, it is best to raise up the car- layer of straw upon a barn stoor, an fides first, and let the flub-fide rost on upon that a thin layer of feed, then

the ground in turning; but if it is done with the teeth of the rake, let the flub-fide be lifted up, and the ears

If faintfoin be cocked at all, th fooner it is done the better, because if the fwarths are dry, much of the feed will be loft in feparating them, the ears being entangled together. When moift, the feed flicks fast in the cars but when dry, it drops out with th

A touch or Chaking.

There are two ways of thrashing it, barn. The first cannot be done be in very fine weather, and while the invery fine weather, and while the inn thines in the middle of the day. The best manner of performing this is to have a large sheet pegged down to the ground for two men to thrash enwith their shalls, while two others bring them fresh supplies in a smaller sheet, and two more clear away the hay that has been thrashed. The feed is emptied out of the larger theet, an riddled through a large fleve, to fepa-rate it from the chaff and broken flalks; after which it is put into facks and carried into the barn to be wife nowed. Care flould be taken nec to

faintfoin feed to fland till all of it has midt a great heap, or put into a fact; Saintfoln should never be cut in the few days, that the greatest pare of linat of the day, while the sun shines it will lose its vegetative quality. Deout; for them much, even of the un-ring that fermentation, it will be very ripe feed, will find in mowing. The hot, and finell four. Spreading it right time for this work is the morning or the evening, when the dow has or eight inches thick, will answer no rendered the plants supple.

If the weather is fine and clear, the larly turned both day and night, until faintfoin will foon dry fofficiently in the heating is over; but even this the (warths; without turning them; will not make its colour keep to bright but if any rain has fallen, and there as that which is well housed, well is a necessity for turning them; it dried, and thrashed in the winter. should be done very gently while they. This last, laid up unthrashed, will be a second or the winter. gether, as in the other hay made of because it does not lie close enough to faintsom before it has seeded. If the heat. The best way to preserve the swarshs are turned with the headle of feed thrashed in the field is, to lay a

another layer of fraw, and another layer of feed, and fo on alternately, By this means the feed mixing with the straw, will be kept cool, and come out in the fpring with as green a co-

lour as when it is put in.

SALEP, A celebrated reftorative among the Turks, is probably the pre-pared root of certain plants of the orchis kind. This drug, as fometimes brought to us, is in oval pieces, of a yellowish white colour, somewhat. clear and pellucid, very hard, and almost horny, of little or no smell, and talting like gum tragacanth. Satyrion root, boiled in water, freed from the Ikin, and afterwards suspended in the air to dry, gains exactly the fame appearance; the roots thus prepared) dissolve in boiling water into a mucilage. Geoffrey, who first communicated this preparation of orchis, recommends it in confumptions, in bilious dyfenteries, and disorders of the breaft proceeding from an acrimony of the juices.

SALLENDERS, A disease in horses, confisting in cracks in the bending of the hough, and occasion a lameness behind. This difease is cured in the fame manner as the mallenders, See

MALLENDERS

SALT - MARSHES. Pafture-lands lying near the fea, and fometimes o-

verslowed by the fea-water.

"It has been observed," says an in-genious writer in the Museum Rustithrive better, and get fat fooner, in purgative to him. and a land falt-marshes, than in fresh-water mea- "It is not convenient to every one falt-marshes, than in fresh-water meadows or upland pastures; yet I do not to send their cattle to a salt-marsh : reason affigned for it.

pasture is rich and nourishing; and near the fea are more conducive to the as often as they pleafed, they would

ther natural or artificial

"But may we not rather attribute the thriving of cattle on these marshes, to the faline particles with which the no experiment, therefore mention it to the land-holder and farmer.

only as a probable conjecture; for as they fall foon after they are exhaled from the fea, without paffing through the fecretions necessary to to their faline parts, why should not this

be the cafe?

" But to return to my first subject : I am fully of opinion, that the faline particles only, with which the grafs is impregnated in the above-mentioned marshes, cause cattle to thrive in them in the manner they are known to do. These salts purge away the foul hu-mours which the beasts have contracted, either by idleness, or by being over-heated in labour; by which means they are better disposed to be nourished

by the aliment they receive.

If the gran of the transfers is apt to purge cattle, this derupheding, by being long continued will the a means of preventing their growing fat. To this I answer, that the cattle take with their food every day nearly the fame quantity of these purgative particles; but that the quantity of falt, which at their being first put into the march will have that effect, will ceafe producing it when they are by custom habituated to take a daily portion of it; this must be allowed, as we all know, that a few grains of rhubarb will operate as a cathartic to a person that is not accustomed to take it; yet it is as well known, that a man may take many grains daily, if he uses himcum, "that horses and black cattle felf to it, without its being sensibly

remember ever to have heard any good would it not, therefore, be happy, if we could substitute a method that " Some will tell you that the air of would nearly answer the fame purthe fea whets their appetites; that the pose? I do not think this impossible; perhaps if common falt water were to . that the herbs produced by the lands , be laid in the fields for horses to lick : health of herbaceous animals, than thrive much better; were I to fay I fuch as grow on upland pastures, whe- know it would have that effect, it

would be no presumption.

" Cattle are all naturally fond of falt, and if left at their liberty, will take no more of it than what will do earth as well as its produce is, when them good. With this help, our freshnear the fea, frongly impregnated? water meadows, and natural and artiPerhaps even the dews have their por- ficial paftures, would yield us a greater tion of falt; but of this I have made profit, and of course be worth more

" Some will not allow a thing to have merit, unless it is supported by what they call a proper authority; and they do not allow the experiments of a particular person to be sufficient. To fatisfy fuch, I can affure you, that in the inland parts of Switzerland, when their horses and cattle have endured the hardships of a long and severe winter, they turn them in the fpring loofe into the mountains, laying falt here and there upon the rocks, for them to refort to when they please; and of this they are fo fond, that when the farmers want to catch their horses, they take some falt in their hats, as we do oats in a fieve, to allure them.

"Experience has long convinced them, that the falt thus laid in their way answers every good purpose; their cattle are more healthy in general than ours are in England, and almost to this alone do they attri-

bute it.

" In the province of Munster and Connaught, in Ireland, they very frequently lay falt on flates, for the benefit of their horses when at grass: this they find does the cattle great fervice, and in this we should imitate them, and not be too proud to learn of them, because in Ireland Agriculture is not in fo flourishing a state as in England.

" Some few farmers have (to do them justice) practifed this method in our own country; but, contenting themselves with the profit resulting from it, they have not propagated the knowledge or the many advantages they are sensible may be derived from this practice of giving falt to

" The farriers and horse-jockeys know well the use of salt; they mix it often in their medicines, and find by experience, that nothing proves fo powerful a flomachic to horses, as a little salt thrown into their oats.

" I must farther observe, that the use of falt is very proper when cattle are turned into clover, lucerne, or colefeed, to feed; it is well known, that on these occasions they are very apt, unless great care is taken, to be furfeited; the falt would prevent this acsident, and thereby greatly accelerate he fattening of the cattle, and make t much fafer to the farmer.

" Salt has also been found to be of great service in fattening hogs, by caufing them to drink more plentifully than otherwise they would."

SALTWORT: Glaffwort.
SALLOW. [Salix.] The forts are,
1. The common willow, with acutepointed rough leaves. 2. The white willow. 3. Yellow, or golden willow. 4. The purple, or red willow. 5. The ofier willow. 6. Broad-leaved fweet-scented willow, with five sta-mina. 7. Willow, with smooth sawed leaves, and three stamina. 8. Almond leaved willow. 9. Crack willow. 10. Babylonian, or weeping willow; with feveral others, as Norfolk willow; the upland red willow; Dutch offer; white ofier, &c. The flowers of all are katkins; from the fides of the branches they are all easily propagated by cuttings or layers; the former when defigned for pollards, and the latter when intended for trees.

SAMPHIRE. [Crithmum.] This plant grows wild on rocks, and in maritime places; the leaves are formewhat like those of fennel, but the segments much thicker and shorter; their smell refembles that of fmallage; the tafte is warm, bitterish, not agreeable. They are faid to be stomachic, aperient, and

diuretic.

SANICLE, [Sanicula.] This plant grows wild in woods and hedges, and flowers in May. The leaves have an herbaceous, roughish taste; they have long been celebrated for fanative virtues, both internally and externally: nevertheless, their effects, in any intention, are not confiderable enough to gain them a place in the present

Bear's Ear SANICLE. [Cortufa.] This plant grows naturally on the Alps, and the mountains of Austria, and Siberia; it is propagated by parting the roots as for the auricula.

SAND. A genus of foffils found in minute concretions, forming together a kind of powder, the genuine particles of which are all of a tendency to one determinate shape, and appear regular, though more or lefs complete concretions; not to be diffolved or dif-united by water, or formed into a coherent mais by means of it, but retaining their figure in it; transparent, vitrifiable by extreme heat, and net discoluble in, nor effervelding with

These are subject to be variously blended and intermixed either with homogene, or heterogene particles, particularly with stakes of tale; and according to these, and their different colours, are to be subdivided into several kinds, as red, white, &c.

veral kinds, as red, white, &c.

Dr. Lister divides the English sands anto two classes: The first, sharp, or rag sand, consisting of small transparent pebbles, naturally found on the mountains, and not calcinable; these he farther divides into sine and coarse, and subdivides each, according to the colours, into white, grey, reddish, brown, &c.

The fecond, foft or smooth, which he subdivides into that with Bat parcicles broken from lime stones, that with filver-like particles, and that with

gold like particles.

As to fand, its we is to make the clayey earth fertile, and fit to feed vegetables, &c. for earth alone, we find, is liable to coalefce, and garher into an hard coherent mafa, as is apparent in clay; and earth thus embodied, and as it were, glued together, is no-ways disposed to nourish vegetables; but if with such earth, fand, &c. i. e. hard crystals, which are not dissolvable in water, and still retain their figure, be intermixed, they will keep the pores of the earth open, and the earth itself loose and incompact, and by that means give room for the juices to ascend, and for plants to be nourished thereby.

Thus a vogetable, planted either in fand alone, or in a fat glebe, or earth alone, receives no growth or increment at all, but is either flarved or fuffocated; but mix the two, and the mass becomes fertile. In effect, by means of fand, the earth is rendered in some manner organical; pores and interflices being hereby maintained, something analogous to vessels, by which the juices may be conveyed, prepared, digested, circulated, & at length excerned, and thrown off into the

roots of plants.

Grounds that are fandy and gravely early admit both of heat and moifture; but then they are liable to these inconveniencies, that they let them pass too soen, and so contract no ligacture, or elle retain it too long, especially where there is a clay bortom; and by that means it either parches for chills too much, and produces nothing but moss, and canterous informities; but if the fand happens to have a surface of good moold, and a bottom of gravel, or loose stone, tho it do not hold the water, it may produce a forward fweet grass; and tho it may be subject to burn, yet it quickly recovers with the least rain.

Sea fand is accounted a very good compost for stiff ground, for it effects, the two things following, viz. it makes way for the tree or feed to root in stiff ground, and makes a fume to feed it.

Sand, indeed, is apt to push the plants that grow upon it early in the spring, and makes them germinate near a month sooner than those that grow upon elay, because the falts in the sand are at full liberty to be raised and put into motion upon the lead approach of the warmth of the sun; but then, as they are hasty, they are soon exhaled and lost.

It is remarkable, that fand, though it appear a very hard, denfe, and indiffoluble body, yet is contained invisibly in the brine, or falt water of our falt fprings; and even on the fhooting of the falt after evaporation, there fill remain the particles of it in the clear pellucid falt; and this, though wholly foluble in water, yet when a brine made by fuch a folution is boiled, deposits as much of the fand as the common brine of the poits, or fea-water.

mon brine of the pits, or fea-water.

Dr. Plot, who was very curious to know the true history of this singular effect, procured experiments to be made in the following manner: Eight folds of fine holland, and as many of finer cambrick, were put together, and a quantity of the brine of the Staffordshire salt pits being strained throshis, there was nothing separated from it but a small quantity of black dust, which seemed to have fallen in by actident, and which was not at all like sand; yet, on evaporating this brine, it was found to contain no less than one south part as much fand as salt; the quantity of brine, yielding a bushed of salt, yielding also a peck of sand.

Some have supposed from these, and

Some have supposed from these, and the like observations, that the fand was generated during the time of the

boiling

boiling the liquor, but the more careful examiners think otherwife; it appearing to them that the particles of this fand may be feen in the brine by the help of a microscope, before the boiling, in form of rectangular oblong plates, some nearly square; these were so small as readily to pass the strainer with the water, and appearing as numerous in at after, as before the straining, shew that they are no more to be kept by such means than the salt.

kept by fuch means than the falt.

The pores of the finest strainers, examined by the microscope, appear twenty times bigger than these plates, or particles of the sand, and therefore it is not to be wondered at, that they let them through. There requires, therefore, no more to the formation of the fand, than the coalescing of several of these particles into one larger granule, and so on; and this is very likely to be done by means of the evaporation of a part of the fluid which kept them separate, and of the mo-tion given to them in boiling, which naturally and necessarily brought them into the spheres of their own mutual attractions, at a time when their attraction with the fluid they fwam in was also much diminished with its quantity. This attraction seems even evidently to increase between the particles as the water becomes evaporated, and when finally the falt is drawn from it, and it is examined as it drops from the balkets in which the fait is put to drain, it is feen to contain more numerous particles of this fandy matter than before; and thefe are found to coalefce into yet larger concretions by degrees, as the remainder of the fluid evaporates from them on the glafs,

The particles of this stony matter, when once thus united, are no more to be separated by water, nor is the matter any longer soluble in that sluid. The common spar sound in form of stalactites and incrustations on the roofs, walls, and shors of old caverns, shews that it was once dissolved in water, and by that means brought to those places, and made into those forms; and it should seem that this sand, as it is called, was only this fort of spar, which is contained more or less in all water; and which, on the evaporating of that water, and sopa-

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rating the falt, which might help ist
making the water a menttraum proper
for the retaining it, fhoots out into its
own natural concretions; for the figure of these thin plates is the true and
natural thin parallellopiped or rhomboidal figure of the smaller concretions
of that matter, and even of those pieces
into which it falls on breaking.

Common fand is a very good addition by way of manure to all forts of clay lands; it warms them, and makes them more open and loofe. The best sand for the farmer's use is that which is washed by rains from roads or hills, or that which is taken from the beds of rivers; the common sand that is dug in pits never answers nearly so well. Sand mixed with dung is much better than laid on alone; and a very sine manure is made by covering the bottom of sheep-folds with several loads of sand every week, which are to be taken away and laid on cold stiff lands impregnated as they are with the dung and the urine of the sheep.

Besides clay land, there is another fort of ground very improveable by sand; this is that fort of black foggy land on which bushes and sedge grow naturally, and which they cut into turf in some places. Six hundred loads of sand being laid upon an acre of this land, according to the Cheshire measure, which is near double the statute acre, meliorate it so much, that without ploughing, it will yield good crops of oats or tares, though before it would have produced scarce any thing. If after this crop is taken off, the land be well dunged and laid down for grafs, it will yield a large crop of sweet

hay.

Once fanding this land will improve it for a vast number of years, and it will yield two crops of hay in the year, if there be weather to make it in. Some land in Cheshire has been by this means rendered of twelve times its former value to the owner. The bogs of Ireland, when drained, have been rendered very fruitful land, by mixing sand in this manner among the earth, of which they consist. Add to this, that in all the boggy lands, the burning them, or siring their own turf upon them, is also a great advantage.

The common peat, or turf afhes, mixed with the fand for these purpofes, add greatly to its virtue.

Sea fand, which is thrown up in creeks and other places, is by much the richest of all fand for manuring the earth; partly its faltness, and partly the fat and unctuous filth that is mixed among it, give it this great vir-tue. In the western parts of England, that lie upon the fea-coafts, they make very great advantages of it. fragments of fea-shells also, which are always in great abundance in this fand, add to its virtues; and it is always the more esteemed by the farmers the more of these fragments there are among it.

The fea fand used as manure in different parts of the kingdom is of three kinds: that about Plymouth, and on other parts of the fouthern coasts, is of a blue grey colour, like ashes, which is probably owing to the shells of muscles, and other fish of that or the like colour, being broken and mixed among it in great quantity. Westward, near the land's end, the sea fand is very white, and about the ifles of Scilly it is very gliftering, with small particles of tale; on the coast of the north fea the fand is yellowish, brown, or reddish, and contains so great a quantity of fragments of cockle-shells, that it seems to be chiefly composed of them. That sea sand is accounted the best which is of a reddish colour; the next in value to this is the bluish, and the white is the worst of all.

Sea fand is best when taken up from under the water, or from fand banks which are covered by every tide.

The fmall grained fand is most sud-

den in its operation, and is therefore best for the tenant who is only to take three or four crops; but the coarse or large-grained sand is much better for the landlord, as the good it does lasts many years.

Where the fand is dredged out of

the fea, it is usually twice as dear as where it is taken from the fand banks,

When the land has been well manured with the large fand, they take four crops of corn from it, and then lay it down for pasture for fix or seven years before they plough it again. The grafs is so good, that they commonly mow it for hay the first year; it

always abounds very much with the white - flowered clover. If the grass grows but short, it is the farmer's interest to feed his cattle upon it, and it will turn to as good account this way, being very fweet and rich, and making the cattle fat, and the cows yield a very large quantity of milk

SAP. A juice furnished by the earth, and changed into the plant, confifting of fosfil, saline, aërial, and other particles from putrified animals,

vegetables, &c.

SARCOCOLLA. A concrete juice, brought from Persia and Arabia, in small, whitish, yellow grains, with a few of a reddish, and sometimes of a deep red colour, mixed with them; the whitest tears are preferred, as being the freshest: Its taste is bitter, accompanied with a dull kind of sweetness. This drug dissolves in watery liquors, and appears to be chiefly of the gummy kind, with a fmall admixture of refinous matter. It is principally celebrated for conglutinating wounds and ulcers, a quality which neither this, or any other drug, has a just title to. It is an ingredient in the pulvis e cerussa compositus. SASSAFRAS. See BAY.

SATTINFLOWER, See HONESTY SATYRION. See DOGSTONES. SAUCE - ALONE. See HEDGE

MUSTARD. SAVIN. See JUNIPER. This is a warm irritating aperient medicine, capable of promoting fweat, urine, and all the glandular fecretions. The diftilled oil is one of the most powerful emmenagogues, and is found of good fervice in obstructions of the uterus, or other viscera, proceeding from a lax-ity and weakness of the vessels, or a

cold fluggish indisposition of the juices, SAVORY, [Saturcia.] A plant much cultivated in the kitchen-garden, and is of two forts, viz. fummer and winter favory, the uses of both which are nearly the same.

The former is an annual plant, raifed only from its feed, which should be sown in the beginning of April, in a bed of loofe and light earth. If the plants are not intended to be removed. their feeds should be scattered thinly; but if they are to be transplanted, they may be fown thicker, must

must be kept clear from weeds, and are in other respects to be treated as

marjoram. Winter favory may be propagated from feeds fown at the fame time as those of the summer fort; or by flips off its roots, for these are perennial, and will last several years; but as they do not put forth equally tender or well. furnished shoots after they are grown old, the best way is to raise a supply of young plants every other year. The flips of the winter favory will foon take root and flourish; and they, as well as the plants of this species raised from feed, will endure the greatest cold of our winters, and have the most a-romatic smell and taste, when they are planted in a poor and dry foil. Wet ground is very apt to render them mouldy, and consequently make them rot. Mr. Miller has noticed some of these plants growing upon the top of an old wall, where they were fully exposed to the cold, and they there furvived fuch fevere frofts as killed most of those of the same kind that were planted in the ground.

The winter favory flowers in June, and the summer savory in July; but the seed of both ripen in the autumn, and at no great distance of time from

each other.

SANDERS. [Santalum.] There are three species of this wood, the white, the yellow, and the red. The first is of little value; the second has a pleasant smell, and a bitterish aromatic taste, and though but little regarded might be applied to valuable purposes. The red is principally used as a colouring drug.

louring drug.

SAW-WORT. [Serratula.] There are feveral species of this plant propagated in the gardens, and growing wild, some annual and some perennial; the former are propagated by seeds, and the latter by parting their

roots.

SAXIFRAGE. [Saxifraga.] The common white faxifrage grows naturally in most parts of England. The roots of this plant are like grains of corn, of a reddish colour without from which arise kidney-shaped hairy leaves, standing upon pretty long footstalks. The stalks are thick, a foot high, hairy, and surrowed; these branch out from the bottom, and have a sew

fmall leaves like those below, which fit close to the stalk; the slowers terminate the stalk, growing in small clusters: they have five small white petals, inclosing ten stamina and the two styles. The roots and leaves of this plant are used in medicine.

There are many species of this plant cultivated in the gardens, and growing naturally in England; among them is reckoned the None-so-pretty, or London-Pride, They are all cultivated by parting the roots, or by off-sets.

Burnt Saxifrage. [Pimpinella.] There are three forts principally noticed by medical writers, 1. The large or white faxifrage. 2. Two others fmaller; but they all feem to be possessed of the fame qualities, and to differ only in external appearance: and even in this, their difference is so inconsiderable, that Linnæus has joined them into one, under the general name of pimpinella. Our college, instead of the first, which las been generally understood as the officinal fort, allow either of the others (which are more common) to be used promiscu-

oufly.

The roots of pimpinella have a grateful, warm, very pungent tafte, which is entirely extracted by rectified spirit; in distillation, the menstruum arises, leaving all that it had taken up from the root united into a pungent aromatic refin. This root promifes, from its sensible qualities, to be a medicine of confiderable utility, though little regarded in common practice; the only officinal composition in which it is an ingredient, is the pulvip ari compositus. Stahl, Hoffman, and other German physicians, are extremely fond of it, and recommend it as an excellent stomachic, resolvent, detergent, diuretic, diaphoretic, and alexipharmac. They frequently gave it, and not with-out success, in scerbutic and cutaneous disorders, foulness of the blood and juices, tumours and obstructions of the glands, and diseases proceeding from a deficiency of the fluid secre-tions in general. Boerhaave directs the use of this medicine in assumation and hydropic cases, where the strongest resolvents are indicated; the form he prefers is a watery infusion; but the spirituous tincture possesses the virtues of the root in much greater Pp2 perfection.

perfection. There is another species of pimpinella called nigra, from its root being externally of a bright black colour, whilft those of the foregoing forts are whitish; this is remarkable for its yielding an effential oil of a blue colour. It grows wild in fome parts of Germany, Swifferland, &c. and is now and then met with in our

Golden SAXIFRAGE. [Chryfofplenium.] There are two forts, one with alter-nate, and the other with opposite leaves. These two plants are found wild in feveral parts of England, but especially the first, upon marshy soils and bogs, as also in most shady woods, and are seldom propagated in gardens, where, if any person have curiosity to cultivate them, they must be planted in very moist shady places, otherwise they will not thrive. They slower in March and April.

Meadow SAXIFRAGE. See Hog's

FENNEL.

SCAB. A disease incident to sheep, chiefly occasioned by a tedious length

of wet weather,
"I imagine," fays Mr. Vefey, "your readers will not be displeased if I fhould, with your affiftance, communicate to them a remedy for this diforder, which I have feveral times tried, and almost always found to an-

Iwer extremely well.

" Some men, whom I have known to breed and feed a great number of sheep, have been grossly mistaken in their comprehension of the nature of this distemper, which they rashly judged to be merely cutaneous; whereas, when a sheep has the scab, the blood is always more or less affected by it; therefore the outward applications, which are in general alone reforted to for a cure, do for the most part more hurt than good, by driving in the eruption, and making it fix on the internals, thereby occasioning the death of the

" Now the true way to treat this diforder is, first to give the animal fomething inwardly to drive out the eruption; then comes, with propriety, the outward application, which completes the cure by killing the fcab.

"When a farmer has any of his flock afflicted with the scab, let him attend to the directions which follow:

"Take a gallon of foft well or pond water, which divide into two equal parts; in one of these parts diffolve eight ounces of old hard soap; to which, when it is diffolved, add two ounces of spirits of hartshorn, and seven ounces of common falt, with four ounces of roll brimftone, beat to a fine powder and fifted; then take the other part of the water, in which put two ounces of tobacco leaf, and one of white hellebore root; boil this fe-cond part till you have a strong infu-sion, after which strain it clear from the leaves and roots.

" When you have got thus far in the process, take that part of the water, first mentioned, and fet it over the fire; let it boil for about half an hour, keeping it continually ftirring with a wooden ladle during that time; in the mean time heat again the other part, in which the tobacco and hellebore were infused, and when it is hot, mix the two parts gradually together over the fire, keeping the mixture continually flirring till it is taken off the fire, which should be in about a quarter of an hour; when it is quite cold, let it be put into a stone bottle, in order to its being kept in a cool place for ufe,

"Then take four quarts of new ale or beer; put into it twelve ounces of common falt, two ounces of bay falt, and eight ounces of powdered nitre, together with twelve ounces of pounded roll brimstone; set them over a gentle fire, and when the ale boils, take off the fcum; let it boil for about half an hour; after which fet it by till it is cold, and put it into

a stone bottle for use.

"When you are so far prepared, take one quart of ale, set it on the fire; mix into it by degrees, three ounces of flour of brimftone; when it is just ready to boil take it off the fire, and let it stand to cool; and when it is only blood-warm, give this quantity inwardly to three fleep, which is to be repeated every fecond day till they have had three dofes. This will drive out the diforder, when the first mixture is to be rubbed on the distempered parts; and two days afterwards the fecend, and fo alternately for about eight or ten days, till the cure is effected: Sometimes two rubbings

rubbings will be fufficient. I must observe, that all these mixtures will be best boiled in well glazed earthen

or iron pots,"

"The two greatest enemies the fheep," fays another ingenious gentleman, " or at least their wool (which is the most valuable part of them) have, are the fcab and fly. I believe they deftroy more wool than all the other diseases incident to that animal,

"Mr. Vesey has given us an ap-proved remedy for the scab, and at the fame time enters fomewhat into the nature of the distemper. For my own part, I have not prefumption enough to look into first causes; secondary ones are all J aim at; I always took nature to be a wife inftructor, and the furest guide; but if we will hobble out of the way ourselves, she is not

to blame.

" I agree with Mr. Vefey, that in this, and every other diftemper a sheep labours under, the blood is more or less affected and disturbed; which difturbance, if I am not mistaken, the faculty call a fever; therefore it must be always confidered, that a fever is no more than a struggle of nature to get rid of fome enemy in the blood, by throwing it out by fome of the outlets of the body, namely, hy fweat, urine, or flool; or upon the furface of the fkin; and then the feems to fay, I have thrown the diftemper out to your view, and there destroy it by

proper applications.
"It furely is not feab until it is thrown out upon the fkin; and when it is thrown out, what avails giving internal remedies, to do that which nature has done before? If it be out, there's your ailment; and I think, it is an axiom in physic, that when a distemper is once known, it is half cured; if it is only coming out, my advice would be, not to disturb nature, who is always acting for our good, in a wifer and better manner than we can do ourselves; she sometimes, indeed, is too weak for her office, and sometimes too strong; in the one case she is to be properly affished, and in the other, prudently restrained; and when we do raore or less, the effects are generally fatal. I hope this will fatisfy Mr. Vefey, that he is not altogether in the right, any more than his neighbours.

" To cure an illness with a few medicines, is as commendable, as to fay a great deal in a few words. One great obstacle to Mr. Vesey's treatment of sheep with scab, is its being too compound, troublesome, and laborious, fetting afide the expence, and where there are a great number of fheep, hardly to be practifed. I would have all remedies for the ailments of sheep be as simple as possible; and to be obtained and prepared with as little trouble; for certain I am, when it is otherwise, many will let their flocks go neglected, or at best leave them to a slovenly shepherd, who knows very little of the matter; and when clip day comes, when the poor creatures are out o their wool, (if they had any on before) what a fight prefents itself to view! most part of their skins being one continued feab, and other parts eat quite through, and deep into the flesh, by the maggot: This I have feen at clip-day, and may speak it; but what must I alledge it was owing to? Sorry am I to fay, to the over credulity of the master, who thought he had a shepherd who knew every thing; but the event proved the contrary.

"You must not be surprized when I say, what will destroy the fly will alfo cure the fcab, with little or no alterations; mercury is a mortal foe to both; and the remedy for the fly is

" Take of corrofive fublimate, half an ounce; diffolve it in two quarts of rain water; to which add a gill of fo rits of turpentine: This is the wh of it, which must be used in the fol-

lowing manner:

" When the sheep is struck, the shepherd must make a circle round the maggots with some of the water, by dropping it out of a bottle; this p vents them getting away, for they will not come near the water; the he must shred or open the wool with the circle, and drop a few drops of the water among them, and rub them about with his finger, and there leave

them, for they will all die prefently.
" I fpeak this from my own certain knowledge, and many others in this

ert of the country (Isle of Ely) can do the fame.

" To a quart of the above water I add a pint of the simple lime-water of the London Dispensatory; and I de-clare it from experience, there is no more certain cure for the fcab than it; I am fure it is the cleaneft, the feoneft prepared, and when fo, the cheapeft; which are an inducement, I think, sufficient to have every countryman make use of it." Mufeum Rufticum,

vol. ii. p. 369. SCABIOUS. The name of a flowering fhrub cultivated in most pleasure

All the fhrubby forts of fcabious may be propagated by cuttings, which may be taken off during any of the furnmer months, and should be planted in a shady border, and duly watered in dry weather, which will promote their taking root; and then they may be stred and placed in a shady situation, till they have taken new root, after which time they may be placed amongst other hardy exotic plants, in a meltered fituation, where they may re-main until the end of October, when they must be moved into shelter. In some favourable feasons these plants will produce good feeds in England, to that the plants may be raifed from thefe, by fowing them in an open border of light earth about the middle of March; and if the fpring should prove very dry, it will be necessary to water the ground now-and-then, which will forward the vegetation of the feed, fo that the plants will appear in about three weeks after the feeds are fown. When they come up, they must be kept clear from weeds, and in dry weather duly watered; and when they are strong enough to transplant, they should be planted in pots, and ma naged in the same manner as those plants which are propagated by cutsings

All the forts of fcabious continue a long time in flower, for which they are regarded; for there is no very great beauty in many of their flowers; but as most of the hardy forts produce flowers near three months fucceffively, so they may be allowed a place in the borders of large gardens, because they sequire very little care to cultivate them. And as the thrubby kinds continue in flower most part of the year, fo they make an agreeable variety amongst hardy exotic plants in the winter.

SCAMMONY, [Scammonium; Seammony is a concrete juice extracted from the roots of a large climbing plant growing in the Afiatic Turkey. The best comes from Aleppo, in light, spongy masses, easily friable, of a shining ash colour verging to black; when powdered, of a light grey or whitish colour: An inferior fort is brought from Smyrna, in more compact ponderous pieces, of a darker colour, and full of fand and other impu-This juice is chiefly of the rerities. finous kind: rectified spirit diffolves five ounces out of fix, the remainder is a mucilaginous fubftance mixed with drofs: proof spirits totally dissolve it, the impurities only being left. It has a faint unpleafant fmell; and a bitterish, somewhat acrimonious taste.

Scammony is an efficacious and firong purgative. Some have condemned it as unfafe, and laid fundry ill qualities to its charge; the principal of which is, that its operation is uncertain, a full dole proving fometimes ineffectual, whilst at others a much fmaller one occasions dangerous hypercatharses This difference however is owing entirely to the different circumstances of the patient, and not to any ill quality, or irregularity of operation, of the medicine; where the intestines are lined with an excessive load of mucus, the scammony passes through, without exerting itself upon them; where the natural mucus is deficient, a fmall dofe of this or any other refinous cathartic, irritates and inflames. Many have endeavoured to abate the force of this drug, and correct its imaginary virulence, by exposing it to the sume of fulphur, diffolving it in acid juices, and the like; but this could do no more than dettroy as it were a part of the medicine, without making any alteration in the reft. Scammony in fubstance, judiciously managed, stands not in need of any corrector; if triturated with fugar or with almonds, as is frequently recommended for other refinous purgatives, it becomes fufficiently fafe and mild in operation. It may likewise be conveniently diffolved, by trituration, in a firong de-

coction

coction of liquorice, and then poured off from the feces. The college of Wirtemberg affures us, that by this treatment it becomes mildly purgative, without being attended with gripes, or other inconveniencies; and that it likewife proves inoffensive to the palate. The common dose of scammony is from three to twelve grains,
SCORDIUM, See Water GERMAN-

SCORPION-GRASS. See CATER-

SCORZONERA, See Vipers-GRASS. SCRATCHES, A diffemper incident to the heels of horses.

It has fo much affinity with the greafe, and is so often a concomitant with that difease, that the method of curing the fcratches may be selected

from that article.

The parts affected should be first covered with the linfeed and turnip poultice, having a little common turpentine added to relax the veffels; the green ointment may then be applied to promote the discharge, when the fcratches may be dried up with the ointments and washes recommended in that article.

It is best afterwards to keep the heels supple, and fostening with curriers dubbing, which is made of oil and tallow. This will keep the hide from cracking, and be as good a pre-fervative as it is to leather; and by ufing it often before exercise, will prevent the scratches, if care be taken to wash the heels with warm water, when the horse comes in. When they prove obstinate, and the fores are deep, use the following; but if any cavities or hollow places are formed, they should first be laid open, for no foun-dation can be laid for healing, till you can drefs to the bottom

Take Venice turpentine four ounces, quickfilver one ounce; incorporate well together by rubbing some time, and then add ho-ney and sheep's suet, of each two

ounces.

Anoint with this once or twice a day; and if the horse is full or fleshy, you must bleed and purge; and if the blood is in a bad state, the alteratives must be given to rectify it.

SCULL-CAP. [Scutellaria.] There are feveral species of this plant growing in different parts of Europe and America. They are all propagated by feeds.

SCURVY-GRASS. [Cochlearia.] Scurvy-grass is a pungent stimulating medicine; capable of dissolving viscid juices, opening obstructions of the vifcera and the more diftant glands, and promoting the fluid fecretiones it is particularly celebrated in fcurvies, and is the principal herb employed in these kinds of disorders in the northern countries. It is propagated by fowing feeds in July in a moift shady spot of ground. The Sea Scurvy-Grass is also used in medicine; but this grows in in the falt-marshes in Kent and Effex, where the falt water overflows it almost every tide, and can rarely be made to grow in a garden, or at least to last longer there than one year; but it being eafily gathered in the places before mentioned, the markets are supplied from thence by the herb-women, who make it their business to gather herbs.

The little Welch scurvy-grass is a biennial plant, and may be preserved in a garden, if planted in a strong soil and fhady fituation. This plant grows plentifully in Muscovy. as also in Da-

vis's Streights.
SCYTHE, SITHE, or STTHE, The instrument used in mowing, being a crooked blade joined at right-angles to a long pole.
SEA BUCKTHORN. See See

BUCKTHORN

SEAGRIM. See RAGWORT.

SEAM. Tallow, greafe, hog's-lard, SEAM of Corn. A quarter, or eight bushels,

SEAM of Wood. A horse-load of

SEARCHER, See BORER.

SEAVES. Rushes.

SEAVY Ground. Ground over-rue with rushes,

SEED, the product of a plant, where-

by the species is propagated.

The choice of the seed intended to be fowed is an object of greater importance than many farmers feem to imagine. It is not fufficient that the finest grains be chosen for this purpose, unless they are likewise very clean. Such wheat is not difficult to be had from land cultivated according to the principles of the new husbandry; but we feldom find corn entirely free from

feeds of weeds when it had been raifed

in the common way.

It is natural to suppose, that the farily partake of the weakly disposition of the plant which produced them, and that their productions cannot be fo fine as those which grow from the seeds of strong and healthy plants. For this reason Mr. Tull advises to take the seed corn from a richer foil than that in which it is to be fowed, and rather from ground in perfect tilth, than from land which has been less carefully cultivared. This feems to be very right (tho' the contrary opinion is almost generally received) because more may reafonably be expected from the productions of a fine good feed, full of vigour and well conditioned, than from a poor weak plant,

M. de Chateauvieux, who often fowed with no other intention than merely to try, for the benefit of mankind, at what time, in what manner, and what condition, it is best to sow wheat, found that this grain sprouted pretty well even when sowed so green that it had not yet lost its milky quality; but thinks it much more adviseable to sow none but what is thoroughly ripe; because the seed has then attained its full perfection, from whence we may most certainly expect the best

and strongest plants.

"The wheat, fays he, which has been reaped in a warm dry year, feems to me fitter for fowing, than that which has been gathered in a cold wet feafon: for in such a time as this last, all the productions of the earth are less good; their tafte is less favoury; and as that corn in particular in which there is most moisture, is most difficult to keep, I infer from thence that the formation of its grain must be less perfect. I should therefore prefer wheat a year old, provided the year it was gathered in was warm and dry, to that which may have been just gathered in too rainy a feafon; for the same reason, I always choose for fowing, wheat of my high grounds, rather than that which has been produced in flats. The benefit accruing from all this care may, perhaps, not be extremely great; but at the same time it does not coft any thing. Let us do in Agriculture what is done in all manufactures,

where the very smallest profits, the very least savings, are not neglected. Those small articles, often repeated, make large sums in the long run, and

are a real gain.

" Another thing of greater confequence first made known to me by chance, but fince confirmed by re peated experiments always attended with the same success, I strongly re-commend as extremely serviceable to the first sprouting of the seed. In my experimental sowings, I commonly used wheat taken from the heap in the granary; and likewife frequently, corn picked out of the ears the moment before I fowed it. I counted exactly the grains of both forts, and suppose that few will think there could be any difference in their productions. Yet I found a confiderable one. What was picked out of the ears always rose extremely well; fcarce a grain of it ever miffed; whereas numbers of those which were taken from the heap, never sprouted at all. I did not per-ceive this difference at first; but at laft it ftruck me. I relate the fact as it is, without pretending to account for the cause of this difference, which would lead me into too long a digreffion. The experiment it(elf may be of real use, by shewing us, that instead of thrashing the wheat intended for feed at any time, without distinction, it ought not to be thrashed till a very few days, at most two or three, before it is fowed. A few hands will be able to supply the seeds-men with as much as they will want: nor will this method, which may be a means of faving fomewhat in the feed, be attended with any extraordinary expence,

"Perhaps too this practice may be attended with a very valuable advantage. I have not yet made the trials necessary to satisfy myself of what I imagine; but my defire to be of service to the public induces me to mention it, that the lovers of agriculture may reflect upon it, and try such experiments as will clear up my con-

jectures.

"Thrashing the feed only just before it is sowed may possibly, in some measure, or perhaps entirely, prevent the cause of smut in wheat. By this I mean, that the seed which has not been mixed with smutty corn, or any way insected

mixed with fmutty corn, or any way infected by its black powder, will be exempt from that distemper. Not that I take black powder to be absolutely the original cause of this distemper in corn; but I believe it is very capable of communicating it to grains which

are found.

"That nothing may be neglected which can be of any fervice to the feed, great care ought to be taken in thrashing the corn, especially in the manner that business is commonly performed, with flails, upon the barn floor: for a great number of grains are frequently fo much bruifed thereby, that it is impossible they should ever grow. If the wheat thus thrashed for feed is not thoroughly dry and hard, the mischief is still greater; much more of it being then absolutely crushed

by the flail. "As fowing in drills requires less feed than is used in the common method, it will be the easier to execute there an operation which might be too long and troublesome for so great a quantity as is used in the old way. The method which I advise, and which I have practifed, is this. Let one or two beams, two feet and a half, or three feet thick, be laid a crois the barn floor: let the thrashers stand on each fide of the beam, and take out of loofe sheafs of wheat, one of which should be placed behind every man, a handful at a time, and give it two or three strokes against the beam, will bring out a great deal of grain, which is to be referved for feed. The ears thus shaken may be bundled up again, and afterwards thrashed out with the stail, for other uses. This method is not so tedious as some may imagine: we are fure that not a grain is bruifed; and those are the most per-fect which drop out thus. I think I may compare this operation with what is done in the making of wine, where the first running is always the highest flavoured and best,"

Another excellent way to seperate the fulleft, and confequently heaviest grains, which are undoubtedly the fittest for feed, from those which are of less value for that purpose, and at the same time to clear them from many feeds of weeds, is, to make a frout

man, with a broad wooden shovel, throw the corn with all his force towards an opposite corner of the barn, or rather a large boarded hall, which generally is fittest for this work- All the light, small, shrivelled grain, unsit for fowing, and the feeds of cockle, darnel, &c. not being fo heavy as the found folid corn, will fall fhort, and lie nearest to the man who throws. them; while fuch as are large, plump, and weighty, out-flying all the reft, are separated widely, and may easily he gathered up. Experience will fhew the vaft advantages of fowing feed thus

The use of steeps was introduced very early into husbandry, not only as a means of preferving corn from feveral distempers to which it is subject but also with a view to render the feed more fruitful. That fome of them have fometimes answered the former of these intentions is undeniable: but with re gard to the latter, much stronger and oftner repeated evidences than any that have yet been produced, are still wanted to confirm their boasted efficacy. We shall however give a concise account of some of the most famous of both kinds; with this previous observation, that even such of them as have not fuceeeded in some cases, through causes perhaps unknown to us, may possibly do well in others, when tried with proper judgment, and attention. Experiments of this kind should by all means be continued on a double count; first, to take off a prejudice which seems to gain ground, though it be not founded on any rational prin-ciple; and next, to be well affured whether these preparations do, or do not, produce any sensible effect. Experiments feldom prove useless to careful accurate observers. If they do not always answer the end proposed, they at least sometimes lead the way to other important discoveries,

The Romans had their lees of oil, decoction of cypress leaves, juice of house-leek, &c. on which they have bestowed full as much commendation as they merit. Lord Bacon feems to have been the first who paid any ac-tention to this subject in England: but he has only pointed out the path to others: nor do I know any author

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who has yet given us a fet of experiments with this view, long enough continued absolutely to determine what effects some kind of steeps may have towards rendering grain more fruitful.

With regard to the feeds of plants fown in the kitchen-garden, all of them should be gathered in dry weather, when there is not any moisture upon them; and the best way to preserve them is, to hang them up in bags, in a dry room, where vermin cannot come at them. The temperature of this place should be moderate; lest either too much warmth, or a too firong current of air, should make them dry, and confequently decay, fooner than they would otherwise do: and at the same time care must be taken not to exclude the air totally from them; it having been repeatedly ex-perienced, that feeds kept long in bot-tles closely stopped have entirely lost the power of growing. They will keep longest in their pods, when they can be fo laid up, because those cover-ings not only defend them from the injuries of the outward air, but, so long as they are not disjoined from them, continue to supply them with a degree of nourishment which helps to maintain them in a plump state, fit for vegetation. The seed of all soft fruits, fuch as cucumbers, melons, &c. are of course excepted from this general rule; for they must be well cleansed from their furrounding pulp, the rot-ting of which would otherwise foon corrupt them. Those of melons in particular, are so far benefited by being kept in a warmer state than would fuit any others, that the plants produced from them are thereby rendered the less luxuriant, and therefore more fruitful: for which reason it is that many people carry them in an inner pocket of their breeches for fix weeks or two months before they fow them, in order to exhale part of their moifture; and in effect, this will weaken them as much as two years keeping them in the common way.

Those feeds which swim upon the furface of water, when they are put to that trial of their goodness, should be rejected for fowing; because, though many of them will grow, they never produce fo good plants, or fo fine fruit, as the fuller, plumper, and more perfect ones, which fink to the bottom.

The age at which it is best to sow the feeds of the plants before treated of, and the time to which they will keep good, are thus ascertained by Mr. Miller, after many years experi-ence and very accurate observation:—

The feeds of asparagus, bafil, beans, beet, borage, capficum, carrots, ce-leri, chervil, creffes, endive, fennel, finocchia, hyflop; kidney-beans, lavender, leeks, lentils, marjoram, marigolds, onions, parsley, parsneps, peas, purslain, radishes, savory, skirrets, spinnage, thyme, and turneps, are best sown the first spring after they have been faved; and indeed many of them will not grow if they are kept

Those of cabbages, collistowers, endive, lavender, lettuce, mustard, and forrel, will not be the worse for keeping two years, if they are well preferved; though all of thefe are equally

good for use the first year.

The feeds of cabbages, cucumbers, lettuces, melons, and favoys, will grow very well at the end of three years, if they have been properly faved and kept. Some of them, and particularly those of cucumbers and melons, are generally reckoned best when they are three years old; because, when they are new, the plants produced by them will grow too vigorous, and yield but a small quantity of fruit. However, none of these seeds should be kept longer than four or five years, though they will grow at the end of nine or ten: but then their plants will be weak, and their fruit small.

The feeds of fennel will frequently remain in the earth a whole year, espe-cially if they are fown in the spring; fo that whenever the plants do not come up the first year, the ground should be left undisturbed till the following fpring, except only keeping it clear from weeds, and the plants will

then appear.
SEEDLINGS. Young plants which have not been removed from the beds where they have been fown. It is also used to diftinguish plants raised from seeds from those of the same kind which have been propagated by layers

or cuttings.
SEED-LIP, SEED-LEAP, or SEED-Lop. A feed-basket, or the veffel in which the fower carries his feed, in order to fow it.

A term used by horse-SEELING. dealers to imply the time when a horse begins to have white eye-brows; that is, when there grows on that part about the breadth of a farthing, a par-cel of white hair, mixed with those of his natural colour. This is a mark of old age, a horse never seeling before he is fourteen, and always before he is

fixteen years old. SELF - HEAL, [Prunella.] plant grows wild in meadows and pafture grounds, and produces thick fpikes of purplish flowers during the latter part of the fummer. It has an herbaceous roughish taste: and hence flands recommended in hamorrhages and alvine fluxes: it has been principally celebrated as a vulnerary, whence its name; and in gargarifms for aphthæ, and inflammations of the fauces.

It is easily propagated by feeds fown in autumn. There are feveral fpecies brought from different parts of Europe and America, but all hardy enough to bear the open air of England.

SEGGRUM. Ragwort. SEMBRADOR, an instrument used

in Spain for fowing corn. SEMIFISTULAR Flowers, are those whose upper part resembles a pipe cut

off obliquely.
SEMIFLOSCULOUS Flowers, those whose petals are hollow in their lower part; but in their upper flat, and continued in the shape of a tongue.

SEMINARY. A feed plat, or place allotted for raising plants from seed, and keeping them till they are fit to be removed into the garden or nursery.

SENA. The leaves of a shrubby plant cultivated in Perfia, Syria, & Arabia; from whence they are brought, dried & picked from the stalks, to Alexandria in Egypt; and thence imported into Europe. They are of an oblong figure, sharp pointed at the ends, about a quarter of an inch broad, and not a full inch in length, of a lively yellowish green colour, a faint not very disa-greeable smell, and a subacrid, bitter-ish, nauseous taste. Some inferior forts are brought from Tripoli and other places: these may easily be disrower, longer, and tharper pointed; or larger, broader, and round pointed, with fmall prominent veins; or large and obtuse, of a fresh green colour, without any yellow cast.

Sena is a very useful cathartic, operating mildly, and yet effectually; and, if judiciofluy dofed and managed, rarely occasioning the ill consequences which too frequently follow the exhibition of the stronger purges. The only inconveniences complained of in this drug are, its being apt to gripe, and its nauseous flavour.

Baftard SENA. See CASSIA.

Bladder SENA. See BLADDER SENA. Jointed Podded SENA, [Coronilla.]
This is a fhrubby plant of which there are several species differing in height, fome rifing about two feet from the ground, others trailing on the ground, and one rifing to the height of five or fix feet. Some are annuals, and others perennial, the latter as well as the former are propagated by feeds.

Scorpion SENA. Jointed Podded Sena. SENGREEN. Houseleek.

SENEKA ROOT, Senecka, rattlefnake root; the root of a species of polygala, which grows spontaneously in Virginia, and bears the winters of our own climate. This root is usually about the thickness of the little finger, variously bent and contorted, and appears as if composed of joints, whence it is supposed to resemble the tail of the animal whose name it bears: a kind of membranous margin runs on each fide, the whole length of the toot. Its tafte is at first acid, afterwards very hot and pungent.

This root is not at present much known in the shops. The Senegaro Indians are faid to prevent the fatal effects which follow from the bite of the rattle-snake, by giving it inter-nally; and applying it externally to the wound. It has of late been strongly recommended in pleurifies, peripneumonies, and other inflammatory diftempers; in these cases, Lemery, du Hamel, and Juffieu, experienced its good success. (see the French memoirs for the years 1738, 1739.) Its more immediate effects are those of a diu-

Q q 2 retic, retic, diaphoretic, and cathartic; fometimes it proves emetic: the two last operations may be occasionally prevented, by giving the root in small dofes, along with aromatic fimple waters, as that of cinnamon. The usual dose of the powder is thirty grains or

Some have likewise employed this root in hydropic cases, and not without success: Bouvart (in the memoirs above-mentioned, 1744.) relates examples of its occasioning a plentiful evacuation by stool, urine, and perspiration, and by this means removing the difeafe, after the common diuretics and hydragogues had failed: where this medicine operates as a cathartic, it generally proves successful: if it acts by liquifying the blood and juices, without occasioning a due discharge, it hould either be abstained from, or affifted by proper additions.

Gum SENECA. This is brought from the coast of Guinea, and usually mixed with, and commonly fold in

the shops for Gum Arabic.

SENSITIVE PLANT, [Minofa.] There are feveral kinds more or less irritable of this uncommon plant, natives of the West-India islands, and the warmer parts of America; fome of them are annual, and others perennial. They require the fame general manage-ment with other exotics of a warm climate; under this genus of plants are ranged the different species of

SEPTEMBER. The ninth month of the year.

Products of the Kitchen-Garden.

Cabbages, carrots, artichokes, parf-neps, potatoes, shallots, onions, leeks, garlick, cellery, endive, cabbage let-tuce of feveral forts, fcorzonera, falsafy, mushrooms, cucumbers for pickling, melons, kidney-beans, rounci-val peas, marrowfat peafe, garden beans planted late, beets, turneps, radiffies, large rooted parfley, black and white Spanish radishes, sprouts from the early cabbage stalks; and for soups, chervil, forrel, tomatos, gourds, foups, chervii, iorici, cardoon, chard fquashes, burnet, cardoon, chard spiegnum: as also beets, parfley, origanum: as also thyme, basil, marjoram, hystop, winter-favory, and all forts of young falFruits in Prime, or yet lasting.

Peaches; the nivette, Portugal peach, belie-garde or gallande, rof-fanna, pourpree tardive, purple alberge, old Newington, teton de Venus, pavy ropal, admirable, monstruous pavy of Pompone, Catharine, rambouillette, malacoton.

Plums; white pear plum, bonum magnum, green gage, reine claude, perdrigon, St. Catharine, and impera-

trice, damsons, and bullace.
Pears; poir de Prince, autumn ber-

gamot, fwifs bergamot, brute bonne, beurre-rouge, Doyenne or St. Michael, verte-longue, mouille bouche d'automne, summer boncretien, rouffelet de reins.

Grapes; the chaffelas, white muf-cadine, red muscadine, black, red, and white morillon, current or corinth grape, pariley-leaved grape, black, red, and white frontiniacs, Warner's red hamburgh, black hamburgh, Sr. Peter or Hesperian grape, orleans, malmsey, miller grape, damask grape, pearl grape, party-coloured grape, with fome others.

Several forts of figs, walnuts, fil-berts, hazle-nuts; and, against north walls, fome currants and morella cherries, melons, quinces, medlars, laza-

roles.

Apples; embroidered apple, pearmain, golden rennet, red calville, white calville, courpendu, aromatick pippin, rennet grife, catthead, quince apple, spice apple, with some others.
In the bark-bed, the ananas, or pine-

apple.

Plants in Flower. ouses, sweet sultan, marvel of Peru, female balsamine, china pinks, Africans, French marie 12 chryfanthemums, capficums, lupines of feveral forts, fweet feented peas, Tangier peas, double ptarmica or fneezwort, true faffron, carthamus or baftard faffron, autumnal crocufes, cyclamens, colchicum, autumnai hy-acinth, afters of feveral forts; five or fix forts of golden-rod, double fopewort, double camomile, larkfpurs, tree primrofe, polyanthuses, spider-wort, auriculas, sap-dragon, Venus looking-glass, Venus navelwort, candy tuft, China starwort, ox-eye, helianthemoms,

themums, heliotropium, lychnifes, campanulas, autumnal gentians, fcarlet bean, oriental persicaria, stramoniums, folanums, alkekengi with large blue flowers, fantolinas, chryfocoma, chelone with white and red flowers, poliums, amaranthoides, xeranthemums, jaceas, oriental mallow, lava-tera, dwarf annual flock, ketmia vefi-caria, feveral forts of fun-flower, elichryfums, eupatoriums, hearts-ease, red garden valerian, catanance quo-rundam, ruyichiana, rudbeckia, fil-phium, large blue aconite, wholiome wolffbane, cerinthe, alyffon fruticofum, alyssoides, dianthera, hydrangea, te-tragonotheca, monarda, ambrosia, old man's head pink, anonifes two or three forts, schrophularias, dodartia, echi-ums, buglos of three or four kinds, convolvulus of feveral forts, double and fingle Indian nafturtium, with forme others.

Hardy Trees and Shrubs now in Flower. Talmine, monthly role, mulk role, paffion-flower, arbutus, pomegranate with double flowers, shrub cinquefoil, mallow tree, althæ frutex, kermia fyriaca, lauruftinus, honeyfuckle, fcorpion fena, agnus caftus, rhus of feve-ral forts, celaftrus, medicago frutef-cens, fhrubby St. Johnswort, Itea, clethra, kalmia, azalea, dwarf medlar from Crete, Spanish broom, Pocock's bladder fena, hamamelis symphoricarpos, ciftuses, lucca broom, cytissus hirfutus, tamarisk with some others. Medicinal Plants, which may now be ga-

thered for Uje. Calamus aromaticus, winter cherry, arum or cuckow-pintle roots, wholsome wolfsbane roots, barberry fruit, hemp feed, capficum or Indian pepper, baftard faffron, cucumber feed, bitter vetch feed, fennel feed, fenugreek feed, alifander feed, walnut fruit, let-tuce feed, lentil feed, lovage feed, gromwell feed, flax feed, hops, millet feed, fweet fern feed, garden crefs feed, macedonian parfley feed, candy carrot feed, common parfley feed, radish feed, elderberries, favin, seseli seed, flixweed seed, mustard seed, nightshade, golden-

Plants now in Flower in the Green-House and Stove.

Oleanders with double and fingle nowers, colutea Æthiopica, amomum

Plinii, myrtles, tree candy tuft, fcabious tree, houseleek tree, several forts of ficoideses, cotyledons, aloes, Indian fig, double nasturtium, Spanish jas-mine, azorian jasmine, yellow Indian jalmine, arabian jalmine, polyanthules, Guerniey lily, belladonna lily, leonu-rus, cytifus incanus, capers, granadil-las, fenfitive and humble plants, heliotropium arborescens, amber tree, apocynums, lantanas of several forts, abutilons, fritilaria craffa, camna indica, bean caper, Indian arrow-root, African alcea, African groundfel tree, indigo, palma christi, spurges, euphor-bium, physick nut, elichrysums, grewia, papaw, turnera, stramoniums, diofmas, chironia, anemonospermoses folanums, fpartiums, dorias, lotus hæmorrhoidalis, cardinal's flower, calhæmorrhoidalis, cardinal's flower, cal-fias, fena alexandrina, fena spuria, ketmias, piercea, pancratiums, cri-num two sorts, hæmanthus, plume-ria, bauhinia, martynia, milleria, ce-strums, helleborine, rauvolsia, malpi-ghia, convolvuluses, bastella, alkekengi three or sour sorts, spigelia, oldenlan-dia, maurocenia, clissortia, Lotus with black slowers. African wood forrel. black flowers, African wood forrel, ornithogalum luteum, kleinia, faururus, anthericums, ginger, coftus, kempfe-ria, volkhameria, galingale, d'ayena, ruellias, barleria, fweet-fcented beliotrope from Peru, phylica, commelina, rondelitia, upright torch thiftle, clutia, geraniums of feveral forts, arums, tournefortia, with some others.
SEPTOIL, See TORMENTIL.

SERMOUNTAIN. See LASER-

WORT. SERPENT'S TONGUE. See AD-

DER'S TONGUE.

SERVICE TREE, [Sorbus.] The right fervice tree is a tall and beautiful tree, and very well worth planting for its timber. There are two or three other kinds which are called by the fame general name, and they agree in the nature of the wood, as well as in the flowers, and the shape of the fruit; but they vary in the shape of the leaf, and the degree of goodnes. These other kinds are distinguished by the names of, 1. The Service Tree, with the fruit red in the middle. 2. The short fruited service; and, 3. The wild service or quick beam.

The first is the most valuable, and

the two next come nearest its nature. The last differs more, and is not generally accounted of the service kind, but called by a distinct name. The flowers of the others are much alike; they appear early in spring, and the fruit is very rough to the taste till thoroughly mellow. All the summer it makes a beautiful appearance.

The beft foil for the Service Tree is a tough and firm loam, with some rich earth among it. Such are very common toward the foot of hills, or on any gentle ascent, and these are the best situations also for this tree. When the soil is too light, the tree grows very slowly; and when it is too dry, the fruit ripens very poorly, neither do the leaves stand their time. When the service is judiciously planted, it grows quick, and answers very well to the husbandman; but when the plantation is made at random, none answers worse. Few know its value; because few have given it a fair trial; nor is its timber so much known, or so common to be had, as it ought to be, for this very reason. He who will fall into the method of raising these trees, will do a service to the public, as well as to himself; for there needs but a beginning to incite others, and the consequence would be a ready market for the timber, and it would prevent the importation of a great deal of foreign sine wood; which, however called by founding names, is inferior to the fervice tree in beauty, and in value.

fervice tree in beauty, and in value.

The fervice may be raifed from feed, but the better way is by layers, which take root very freely, and are naturally produced in great abundance. Those who have a mind to raise them from feed, must sow them in shallow trenches, in a nursery, and keep them clear from weeds. At two years old they must be planted out at a yard distance, and three or sour years after that, be set where they are to stand. Such as want only a few trees, may conveniently enough raise them from suckers, which grow about the old trees in great abundance. These are to be transplanted early in spring.

Which ever way the fervice tree be raifed, it should be carefully trimmed up for the first eight or ten years, that it may not spread into branches till at a certain height, when there will be a

handsome trunk for timber. After this it is best left to itself.

It is a very proper tree for avenues, clumps and hedge rows, and 'tis great pity that it is not more frequent. Its beauty should be an inducement to the gentleman, and its quick growth and valuable wood to the husbandman.

and valuable wood to the husbandman.

The Quick Beam, or, as fome call it, the Quicken Tree, or according to others, the Wild Service, or Mountain Ash, for it has all these names, is properly a kind of service tree. It is a beautiful but a small tree, being one of the least of those that are accounted timber trees, or planted for that purpose.

The bark is pale and fmooth, the leaves are beautifully formed, each being composed of many smaller, which are long, narrow, and finely dented at the edges. The flowers stand in great bunches at the end of the branches, and are whitish, large and handsome: and after these come beautiful berries red like coral.

This elegant little tree is a native of England, and is a great beauty and ornament to our coppices and hedgerows, in those counties where it is most frequent. Its fair appearance has occasioned its being taken also into gardens, where it makes a fine figure in the wilderness quarters.

The best soil for the quick beam is a light and dry loam; and it grows best on a somewhat rising situation. No tree is better suited to thrive in hedgerows, where the soil is light and dry. It roots itself very sirmly; and shoots

rows, where the foil is light and dry. It roots itself very firmly; and shoots up in a moderate time to its full stature.

The best way of raising the quick beam is from seed. The berries are to be gathered when sull ripe, and sown after they have been spread a fortnight in a dry airy garret. They shoot up very regularly and freely, and should be removed from their first bed to some other part of the nursery at two years growth, and planted at two foot distance. Three or four years after this, they are sit to be transplanted to the places where they are to stand; and a small nursery will thus, with little or no trouble, raise such a quantity as will stock a large piece of ground; where being set in hedges, or the banks of coppice woods, & other such places, they will quickly grow to some value.

Thofe

Those who would only raise a few trees, may take up fuckers from about the old ones, for they rife in abundance,

and grow freely.

The quick beam should have very little trimming or lopping; for, as it is not to be carried to a large tree, 'tis best left to nature, the branches of themselves growing with a pretty irregularity.

HORN-BEAM, [Caspinus.] This by mistake in its alphabetical arrangement is referred to SERVICE, and accordingly we have on that account

placed it here.

The horn-beam is a beautiful and regularly growing tree. Its bark is brown and tolerably smooth, and the wood firm. The leaves are fhort and indented at the edges, they are fomewhat like those of the elm, but of a more beautiful green. The flowers more beautiful green. The i hang in catkins like those of the hazel; and the fruit, which is dry and light, grows on a different part of the tree.

There are four kinds of this tree

raifed in nurseries. 1. The common Horn-Beam. 2. The Hop Horn-Beam. 3. The flowering Horn-Beam; and, 4. The Horn-Beam with striped and, 4. The Horn-Beam with striped leaves: but the husbandman who would plant for advantage, has nothing to do with any of these except the

common kind.

The horn-beam is an extreamly hardy tree, it will grow in the worst foil and bleakelt fituation. For this reason it is very proper to be planted on the tops of cold hills, and in places fo exposed, that others will not grow on them. It will thrive very well in hedges, and in woods; and is excel-lent for clumps in the bleakest and worst parts of parks, and it every where engages the eye by its beauty.

The best way of propagating the horn-beam is by layers. It may also be raised from seeds, but this is a more tedious method, and the other does as well. If the feeds are preferred, they must be gathered in September, and fown three weeks or a month after, laying them in the mean time in a dry airy place. They will fometimes come up in five or fix months, fometimes they will lie till the following spring. They are to be thinned foon after they

appear, and kept clear of weeds, and at two years old to be removed to another part of the nursery, where they must be planted at a greater distance, and 3 or 4 years after they are to be finally removed, and fet where they are to remain. But the method by layers is much more expeditious, and the trees grow as beautiful that way as the other.

SETTER. A kind of feton or iffue, made by cutting a hole in the dewlap of an ox or cow, and putting into the wound a fort of tent formed out of the root of helleborafter; by which the ill

humours vent themselves,

SETTERWORT. Bearsfoot.

SETWELL. Valerian.

To SEW, or Go Szw, to go dry ; spoken of a cow.

SHADDOCK. See ORANGE TREE. SHAKING, A difease incident to sheep, confisting of a weakness in their hinder quarters, so that they cannot rise up when they are down. No cure

is yet known for it.

SHARE of a Plough. That part which cuts the ground, the extremity forward being covered with a sharp-pointed iron, called the point of the share; and the end of the wood behind, the tail of the share, See the artical Proven

SHAVE GRASS. Horfe tail. SHAW. A wood that encompasses

SHEAT of a Plough. That part of the plough which passes through the beam, and is fastened to the share.

The fleat, or as it is fometimes called the fore-sheat, there being another piece of timber behind it called the hinder-fheat, should be seven inches wide, and fastened to the beam by a retch (a piece of iron with two legs) and by a wedge driven by it into the hole of the beam. The angle conhole of the beam. The angle conof the plough should be about fortytwo degrees

SHEAVES. Bundles of corn bound

up in the field

SHED. A flight temporary covering. SHEEP. Next in value and confideration to the larger of the horned cattle comes the sheep; an article of vast concernment to the farmer: cheap in the purchase; easily fed; and returning a great profit by many feveral ways: even its dung upon the land often paying for all it eats while fed

we have already advised the farmer In the choice of his larger cattle, to proportion their kind to the degree of richness in his land: it is not the fortune of every hulbandman to labour upon a fruitful foil: but the worlt is not without its uses; and sheep are a stock for such as will not support the larger kinds. We see them thrive upon the most barren downs; and the farmer will always find them ready to satten upon such grounds as will not keep the other kinds alive.

As the oxen of England are of very

different breeds, though all the same in kind, so it is with the sheep, which differ extreamly according to the feveral breeds in different places; and are therefore fuited one to one kind of land, and another to another.

We shall advise the husbandman to great caution, in the flocking his farm with sheep: and this under two heads, first, with respect to the breed, and secondly, for his choice of the crea-tures themselves; for there are, in every breed, many that are much finer than others, and there he should chuse. Half the profit that might be made by this part of the husbandman's stock. is loft by careleffness in the first choice, and in the following management : but an error in the first choice is the most fatal, because it is irrecoverable, except by beginning over again. We shall therefore first consider that, and laying before the practical husbandman the properties and particular uses of the several different breed of sheep that we have in England, shall advise him in his choice according to his main delign, his best advantage, and the nature of the land he has to stock with them.

With respect to the fineness of the wool, there is a fmall breed, distinguished by their black face and thin coat, that exceed all others. They bear but a small quantity in comparison of many, but the quality of it makes amends. These are easily known by fight. They were first raised in Herefordshire and Worcestershire. And for that reason are known in many

places by the name of the Herefordthire or the Worcestershire breed, dry, barren, and exposed pasturage will very well feed this kind, for they are hardy; and the shorter the grass on which they feed, it is observed the si-ner the wool. They are also excellent for the table, the joints being small and full of a fine gravy. We see this kind kept in many parts of England, in gentlemen's parks and lawns, and they every where make a pretty ap-

Pearance.
The kind most opposite to these are a large, tall, and heavy-loaded sheep : these have strong limbs, and a stout gait in walking: they carry a great deal of wool, but it is coarfe. These were first bred in Lincolnshire, and in fome of the adjoining counties; and are fond of living in falt marshes. They have been taken into many parts of the kingdom, to other ground, where they do not keep entirely to their own nature: and yet are called, from the place whence they were brought, the Lincolnshire breed.

The flesh of these is large grained,

but moderately taffed, and no where very much efteemed. However, as they are observed to succeed better than the other breeds, in places toward the fea, it may be proper for the husbandman who has land in such a situation, to take fome of them: though not for his

whole stock in this kind.

Thirdly, there is a breed between these two kinds, which in general should be preferred to either. This is a large, tall, and strong sheep, of the best shape of any, & having the deepest coat of wool. This was originally sed in several of our midland counties, and has thence been called by fome the Midland Breed; and by others, from fome particular counties famous for them, the Leicestershipe or Northamp-tonshire breed. The wool of this kind, though not altogether fo good as that of the small black-faced sheep, is greatly preferable to that of the Lincolnshire breed; and the quantity is so much greater than that of the smaller kind, that it very well makes amends for its

inferior quality.

The flesh of this sheep is the common mutten, not in any thing particular for goodness ar badness; and it will do very well upon the common pafture grounds, and thrive upon every common kind of food, For these rea fons it is fit that thefe fheep fhould be

most generally bred.
When the husbandman has very poor pasture grounds, let him take the He-refordshire breed; and when he borders upon the fea-coaft, or upon the thores of large falt-water rivers, let him prefer, in part at leaft, the Lincolnfhire kind; but when he has none of thefe particular reasons to byals him, let him prefer this midland breed to

To these three, which may be called the general breeds of sheep, we shall add a few words on two other kinds.

The sheep bred in the northern parts of this kingdom, are a large and bigboned fort; they approach to the Lincoinfhire kind in shape; but their wool is harsh, rough, and hairy; these are called by some the Yorkshire breed.

Their fiesh is inferior to that of feveral other kinds, as well as their wool; but they have an advantage over the others, in that they will fland the coldest weather, and take care of themselves where some of the tenderer breeds would be loft. This may rewhose lot has thrown him far north. where the other kinds will not thrive; but he should not introduce them into his farm in any other fituation, for they are less profitable than any others. The last kind, or breed, to be men-

tioned, is in a manner peculiar to mountainous countries; and is most frequent in Wales. It may therefore be called the Welch breed. This is a fmall, but well-shaped sheep; and so hardy that it will live any where. The shesh is excellent for the table. But the wool is not only finall in quantity, but is the worst produced by any breed

of fheep in this country.

The husbandman will see by this account, that it never can be his interest to admit this breed among his flock, unless compelled to it by the particularity of his fituation. The little blackfaced theep of Herefordthire has the fame advantage in the excellence of its field; and it has, into the bargain, the finest wool. Therefore it is highly to be preferred, where it will thrive : and it will do on very poor and very exposed ground. However, if at an time the farmer finds his pastures fo poor, so exposed, and miserable, that they will not support this kind, all he bas to do is to call in the other, or Welch breed, which will live any where.

Having laid before the hufbands this account of the three principal dif-ferent breeds of theep in England, and the two other kinds that are in a manner particular to certain places, the next part of our care must be, the in-Aructing him in his choice, not only of the breed he shall fix upon, for the grounds of that choice have been laid down already, in their feveral charac-ters; but of the particular creatures he shall fix upon in the breed that is most suited to his purpose.

But to this particular let us premise

But to this particular let us premife a few words upon his general choice, that is, as to the breed. He fees here five feveral kinds of sheep, some large, others smaller; and some yielding a greater, some a smaller quantity of wool, which is also on one breed fine, and on another coarser. He has his choice given him among all these, for we suppose him not yet to have begun stocking his farm with this article it would be natural for him to prefer at once the finest kind as most prostable; but let him not only remember, but strictly observe what we have just laid firitly observe what we have just laid down, that every breed will not fuit every pasture.

He has now seen what are the kinds

of theep; let him examine what is the nature of his land; and when he has impartially confidered this, let him fix upon that breed which will thrive best upon that breed which will thrive beit on that kind of paffurage he has at his command, for this we have expressly told him with respect to each; and let him then purchase for his farm that breed which he sees will be most fuited

to thrive on it.

This he may be affired of, and he may extend the rule farther than barely to his sheep, that he will have more profit from the very worst-kind that shall thrive upon his land, than he posfibly can from the very best that shall

flarve upon it.

One thing farther is to be noted before we come to the particular choice, that is, the difference of the land which he is to bring them to from that whence he purchased them; this must be in R r

this respect, as has already been cautioned upon other articles, always in favour of the land to which they are brought; for any breed whatever will decline upon being brought from 'a richer pasturage to a poor one.

Let the farmer therefore fee that he buy not only a kind fuited to his grounds; but that he buy them from a worse land than his own, because upon that will depend their immediate

Having thus fettled the general points, let him proceed to the care he is to use in the choice of each particular sheep.

Whatever breed they are of, let him observe that what he purchases are stout, hearty, well made, and big boned: let him see that the wool of whatever kind or depth be soft to the touch, and seem satty in the handling; and that it be clean and well curled.

Sheep of this condition, whatever breed they belong to, always bear the largest quantity of wool according to their kind: and these are marks also that make them bring a price at market. The butcher has his rules for judging as regular as the best farmer, and these are the things after which he principally enquires to settle the creature's value.

In the last place, we are to give directions for the choice of sheep to breed. This is a very material article, and must be well regarded. Let the farmer chuse his ram by these marks; let him be young, handsome, and well shaped, of whatever breed, see that his wool be clean and grow well; and let the skin underneath be of the same colour. Let his body be large and long; his forchead broad, round and rising. Let his eyes be large and of a chearful aspect, and his nostrils strait and short.

The sheep without horns, which are called the polled breed, are accounted the best breeders; this is established upon so long and repeated experience, that the farmer needs not doubt it.

In the choice of the ewe for breed, let her neck be large and upright, naturally bending like that of a horfe. Her back should be broad, and her buttocks round: her tail should be thick, her legs small and short; and her wool should be thick and deep, and should cover her every where.

Of all things let the purchaser take

care that they be found, and, to know that, let him examine whether any of the wool be wanting: let him fee that the gums be red, and the teeth white, the felt loofe, but the wool firm, the breath fweet, and the feet not hot.

With respect to the age, two years old is the best time to have them at. They will bear good lambs till they are seven years old; and their age is to be known by their mouth. When they are one shear they have two broad teeth before; when two shear, they have four; when three shear, they have fix; and when four, they have eight; after this their mouth generally begins to break.

By this the purchaser will be able to guess at the age of his sheep; and, as to their condition, nothing shews it more than the dullness of their eyes, and the looseness of their wool. If these marks be upon them, let not the farmer purchase them by any means, for they will never stand.

The rams and the ewes being chofen for breeding according to the foregoing directions, the husbandman is next to consider what will be the best time for

putting them together.

Before he puts his rams and ewes together for breeding, we advise him to compute the time of their going with young, and so to know when his lambs will be brought forth. When he has computed this, let him see whether it will be a convenient season for him; and which will be the best. Let him consider at what time of the spring his grass will be fit to maintain the ewes and their lambs, and then put the rams and their semales together so long before, that will bring the young out at a proper time.

Let him confider whether if they fall early he shall have turneps to support them till the grass comes: for we have often seen very great mistakes in this reckoning: and many a time the husbandman, for want of due care in this respect, has lost both his ewes and his lambs for want of due food.

The prudent and confiderate farmer is to take care before he puts his sheep for breeding, that he is sure not only of a support for the young and their dams when required; but that it be a sufficient and good food for them. That which will keep them alive oftentimes,

will

will not be fufficient for their thriving. There must be plenty of what is good in its kind, for if there be a de-fect in either quantity or quality, the lambs will be stunted at first, and this is an accident they very difficultly re-

cover afterwards.

The time of the ewes going with lamb is twenty weeks, and the best feason of the year for them to yean is, toward the middle of April; except where there be very forward grass or turneps. But if on any occasion, from the circumstances of the farm, or any particular confideration, it is necessary to have them yean much earlier, they may be put together fo as to come in

January or February.

In this case there will require a great deal of care to be taken of the lambs for some time. All lambs are very tender when first brought forth, and if they are not tended, the magpyes and other birds will peck their ey out: but the coldness of the feafon keeps fuch as fall in January or Fe-bruary tender and weak much longer than those which are brought forth at a more advanced time in the fpring; and therefore a nicer care is required to breed them up; and it must be continued a longer time than on the other occasion.

As to the land to breed sheep upon, when the farmer has variety, and can take his choice, let him observe these several qualities in the different kinds, and conduct himself accordingly. rich pasture breeds well-shaped and tall sheep, according to their kinds; and such as have a short grass breed a lower but well-set sheep. Those which are bred in mountainous or woody places, are commonly fmall limbed

In general, dry pastures are the fit-test for this purpose: all wet grounds, and such as are liable to be overflowed, being hurtful; excepting only the falt marthes, which, for the proper kinds,

fucceed very well,

The farmer should keep all this in mind, but at the same time remember, that thefe rules are subordinate to those more general ones, which have been delivered already. The breed of his fheep is the great article of confidera-tion in respect of their fize, and he has already been informed what breeds

fuit what lands: those more effential confiderations being kept in mind,

these lesser ones are of great use.

Let the farmer, who is about breeding of lambs, fave the grafs and weeds that grow in the lands he defigns to fallow in winter, that is, from Christmas; and let him turn his ewes and lambs into them in March. If there be a mild winter, this will be a great help to them.

When sheep are to be turned into wheat or rye to feed, the farmer must take care it be not too rank before they are put into it, for in that cafe it gives them purgings, and other complaints.

No cattle whatfoever should be fatted while they are going with young, for nothing is more dangerous to th they should be kept upon a moderate, or rather poor pasture all the time they run breeding, except the three last weeks. This is a rule to be more carefully observed with sheep than any other. If they be fed too high the whole time, it will go hard with them in yeaning; but if they are not put a little into heart before they come to it, they will want firength; and they will also want milk for the support of the lamb.

The proper time of weaning a lamb is at four months old : but in general there need no care or caution to be used at all. In most places where things are properly managed, nature does this, and the owner knows nothing of it: in some pastures it is also the preservation of the lamb to keep fucking.

When the farmer has plenty of good grafs, and his rams always run with the ewes, he need not give himfelf any trouble about the weaning of the lambs. The ewe will in this case go to ram at a proper time of her own accord; and the will then become dry, and the lamb will be weaned naturally.

In fuch pastures as are subject to give sheep the rot at certain times, it is always best to let the lambs run by the ewe; the longer the better. These tender creatures are more ready to come to harm than the full-grown ones in those unfound places: and sucking is the best preservative against it: for they are seldom found to fall into that misfortune while they have milk.

If the farmer have suspicious paf-R 12

tures, and finds that his lambs want milk, it is best to sell them at once to the butcher: for it is not the running by the ewe that will preferve them, the can be of no fervice against fuch an accident, if the wants milk for their

full fupport.

Those he lambs that are intended to be bred as rams, should be separated from the rest, and the others gelt in time. The sooner this is done the better: for every creature bears this operation best while it is tender, and is with the dam. If this operation have been neglected at a proper time, it must be done toward the end of September, at which feafon it is best to feparate the breed or this purpole, and fee it be done fperfectly.

SHEEP'S FESCUE Grass, [Festuca evina.] This grass is much effeemed for feeding of sheep in Sweden, where they have not fuch downs as we have.

Gmelin fays, that the Tartars choose to fix, during the fummer, in those places where there is the greatest plenty of this grass, because it affords a most wholfome nourishment to all kinds of cattle, but chiefly sheep: and he ob-ferves, that the sepulchral monuments of the ancient Tartars are mostly sound in places which abound with this grafs, which shews, adds he, that it has long

been valued among them.

This grass abounds in many parts of England and Wales, and particularly on all the finest sheep pastures in Herefordshire, Oxfordshire, Norfolk, &c. Mr. Stillingsteet observes, that it is a very early grafs, and that, contrary to what Linnzus fays, either sheep, or some other animals do eat the flowering stems of this grass; for, when he fearched for it upon Benstead downs, he could fee no part of it but the radi-cal leaves, except among bushes near the hedges, where it was guarded from the sheep.

SHEARING of Sheep. There are two articles in the condition of the wood which enhance its price. These wool which enhance its price. are, fattyness and cleanness. And it is in the owner's power to give it these in a much greater degree than they, otherwise would be, by his care and attention. The first will be increased by the time of shearing, the other by

cleanliness.

The fattyness of the wool will never give it any value, unless it be at the

famel time clean; and the cleanness will discover its imperfection, instead of

enhancing the price, if it be not fatty, This fattyness of the wool is owing to the creature's fweating, and therefore there must be some hot weather past before it is sheared, that it may have sweated well: not once or twice, for that will answer no purpose: but feveral times for days together, that the moisture may have lodged itself about the wool, and in a manner oiled it fo, that the necessary washing of the creature for cleanlyness, shall not be able to carry it off.

Unless the sheep have sweated well before the washing, that will do harm equal to its good, for as much as it increases the price by cleanness, it di-minishes it by taking off the fatness, It is very necessary sheep should be well washed before they are sheared; but the farmer is to know at the same time, that unless they have well sweat in their wool first, this will hurt it.

Upon this foundation depends all the art of sheep-shearing. The best feafon of the year for doing it is toward midfummer. But let the weather determine, and let not the farmer be carried away by the name of any day, or month, against the use of his reason.

SHEPHERD'S Needle, See Sweet

FERN.

SHEPHERD'S POUCH.] [Burfa Paforis.] This plant is common in waste places; and is found in slower all the Shepherd's purse has long fummer. been celebrated as an astringent, and ftrongly recommended in diarrheeas, dyfenteries, uterine fluors, and in general in all diseases where astringents of any kind can avail; but present practice pays little or no regard to it.
SHEPHERD'S STUFF. Teazel. SHEPHERD'S STUFF.

SHOODS. Oat hulls.

SHOULDER-WRENCH. To understand the nature of these infirmities, it will be necessary to remember, that the blade-bone of the shoulder is fixed to the body, not by articulation or jointing, but by apposition, being laid to the ribs, and fastened by the muscles which lie under and above it; so when a horse happens to receive a blow or strain in the shoulder, the tendons of those muscles are firetched and relaxed; and when that is violent, it is called a ficulderfplait, and becomes more or less dangerous, as the horse is more or less hardy.

Every one sufficiently knows, that a slip, false step, or any undue position of a horse's leg, will strain and weaken the shoulder, by stretching those ligaments; and fometimes the shoulder is affected by a hurt or bruife on the withers, the reason of which may be eafily enough conceived, by any one who will examine into the ftructure of these parts; but when the accident proves not fo violent as to fhew a loofeness and swelling, it is not easily discerned whether the lameness be in the shoulder, in the foot, or any other joint. The best judges have therefore, in all fuch cases, thought it proper to examine all parts from the shoulder downwards, and even to unshoe the horse, that they may know certainly where to apply their remedies. But the infirmities of the shoulders may be diftinguished from those of the feet, by having a horse put to exercise; for if the lameness be in the feet, he will halt most when he is ridden; but if it be in the shoulder, the warmer he grows, the less he will halt; and, if the wrench be violent, he will be apt to cast his leg outwards, forming a circle as he goes. But if none of thefe figns are perceivable in his gait, the fureft way is to turn him short on the lame fide, for that tries the mufcles the most of any thing; so that if the grief be in the shoulder, he will set his foot on the ground hardily, and endeavour to favour his shoulder,

But in order to the cure, a diffinetion ought to be made between an old grief, and a hurt that is newly received; for, in a fresh strain, the first intention is to apply such things as are proper to allay the heat and inflammation, and prevent a too great afflux of matter to the part; whereas in an old grief, those things are chiefly made use of that attenuate and render the superfluous humours sit to pass thro' the pores; and therefore, as soon as you perceive your horse lamed in the shoulder, by a fall, or any other accident, after he has been bled on the opposite side, a cold restringent charge may be applied of vinegar, bole, and the whites of eggs. Verjuice may be assed instead of vinegar upon the road,

which may be had at any farm house; for the sooper a cold application is made, the better. The part ought, in the beginning, to be refreshed 3 or a times a day, with a spunge dipt in vinegar and bole; and after that the sollowing plaister may be applied:

Take common pitch half a pound,
de Minio plaister or diachylon fix
ounces, common turpentine
four ounces: melt them altogether in a pipkin over hot embers, continually stirring; and
when these are dissolved, add
bole in fine powder four ounces,
myrrh and aloes, of each an
ounce. Spread this upon the
horse's shoulder, before it grows
cold, and put fine slocks of the
colour of the horse all over it.

But when the lameness happens to be of an old standing, the following ointment will be of great service.

Take of the soldiers ointment, or

Take of the foldiers ointment, or nerve ointment, half a pound, ointment of marthmallows fix ounces, rectifyed oil of amber four ounces. Mix them all together, & with a hot bar of iron held as near as possible, chase the part twice a day; and, at some intervals, with camphorated spirits.

The foldiers ointment is made as follows:

Take fresh bay-leaves three pounds,
frue two pounds and a half, marjoram two pounds, mint one
pound, sage, wormwood, costmary, basil, of each half a pound,
oil olive twenty pounds, yellow
wax four pounds, Malaga wine
two pounds.

bruife all the leaves, and boil to the confistence of an ointment, and keep it for use. This may be made in a smaller quantity by those who keep

Solleyfell recommends the ointment of Montpellier as an excellent remedy in all strains in the shoulders, &c. It is composed of the ointment of roses, marshmallows, populeon and honey, of each equal quantities. The oils of turpentine, earth-worms, oil of Petre, St. John's wort, nerve oil, bear's greafe, horse greafe, mules greafe, deers suet, badgers greafe, and many such things, are also used in the same intention.

But

But if the lameness does not yield to these things, recourse may be had to roweling, or to the fire; but the last is preserable, and less painful than the usual method of roweling, by bruising and blowing up the shoulder.

And, therefore, with a hot iron, make a circle the breadth of a trencher round the joint, and within the whole circle pierce the fkin, leaving about an inch between the holes, and to each apply yellow wax and rofin melted together, until the escars fall off, and then dress them every day with turpentine and honey, applying plaisters as directed, until the fores are dried up.

Some advise swimming a horse for a shoulder-splait, from an opinion of the joint being out; but if it were really to, he must swim with three legs, which is almost as impossible as for a door to move without hinges. But yet fwimming is not always unsuccessful; and, in all old griefs, it becomes ferviceable in the same manner as a cold bath, by helping perspiration, and giving a more lively motion to the obitructed matter; and therefore the morning is the properest time, because the water is then the coldest, and it should be a continued custom for some time to do effectual service.

But, in all other respects, the horse should be put to no kind of labour, neither ought any one to ride him, for a weight upon his back must needs add to the infirmity, as the greatest stress lies upon the shoulders; but it will be very proper for him to be walked out every day, when the weather is fa-vourable; and his exercise may be in-creased as his shoulder recovers strength; a patten shoe may also be set upon the opposite soot, if he leans too much

SHOVEL. A well-known inftrument, confishing of a long handle; and a broad blade, with raised edges. SHOWEL. A blind for a cow's

eyes

SHROUD. A shelter, or harbour.

SHUCK. A husk or shell. SICKLE. A toothed hook, with which corn is reaped,

SIDE-SADDLE. A faddle for women to ride on horeback.

SIDE-SADDLE Flower, [Sarracona.] There are two species; one growing in the bogs of most parts of North-

America, which has a strong fibrous root, which strikes deep into the foft earth, from which arise five, fix, or feven leaves, in proportion to the ftrength of the plant; these are hollow like a pitcher, narrow at their base, but swell out large at the top; their outer fides are rounded, but on their inner they are a little compressed, and have a broad leafy border running longitudinally the whole length of the tube; and to the rounded part of the leaf there is on the top a large appendage or ear standing erect, of a brownish colour; this furrounds the outfide of the leaves, about two-thirds of the top. From the center of the root, between the leaves, arifes a ftrong, round, naked foot-stalk about a foot high, sustaining one nodding flower at the top, which has a double empalement; the outer one is of one leaf, diwided into five parts to the bottom, where they are connected to the footstalks; these fegments are obtuse, and bend over the flower, fo as to cover the infide of it; they are of a purple colour on the outfide, but green within, having purple edges; the inner empalement, which is composed of three green leaves, falls off; within thefe are five oval petals of a purple colour, which are hollowed like a spoon; these cover the stamina and summits, with part of the stigma also. In the center is fituated a large, roundish, channelled germen, supporting a short style, crowned by a very broad five-cornered fligma, fallened in the middle to the ftyle, covering the stamina like a target; this is green, but the five corners, which are stretched out beyond the brim, are each cut into two points, and are purplish. Round the germen are fituated a great number of short stamina, joining the sides of the germen closely, which are terminated by target-shaped surrowed summits, of a pale sulphur colour. When the flower decays, the germen fwells to a large roundish capsule with five cells, covered by the permanent stigma, filled with small seeds.

The fecond fort grows naturally in Carolina, upon bogs and in flanding shallow waters. The leaves of this fort grow near three feet high, fmall at the bottom, but widening gradually to the top, They are hollow, and

arched

arched over at the mouth like a friar's cowl. The flowers of this grow on naked pedicles, rifing from the root to the height of three feet; the flowers

These plants are esteemed for the fingular ftructure of their leaves and flowers, which are fo different from all the known plants, as to have little refemblance of any yet discovered; but there is some difficulty in getting them to thrive in England, when they are obtained from abroad; for as they grow naturally on bogs, or in shallow standing waters, fo unless they are constantly kept in wet they will not thrive; and although the winters are very sharp in the countries where the first fort naturally grows, yet being covered with water, and the remains of decayed plants, they are defended from frost.

SIEVE. Hair, lawn, or balketwork, strained on a hoop, for separating the flour from the bran, the dust

from corn, &c.

SIG. Urine, chamber-lie,

SIKE. A little rill, a water furrow, a gutter.

SILK GRASS. Dogfbane.
SILVER BUSH. Jupiter's beard.
SILVER TREE, [Protes.] This is
a native of the Cape of Good Hope, of which there are no less than twenty species, but all require the affistance of a stove or green-house.

Silver ward, [Potentila.] Cinque-

foil.

SIMAROUBA. A bark with pieces of the wood adhering to it, brought from Guiana, in long tough pieces, of a pale yellowish colour, and a pretty frong bitter tafte. It has lately come into esteem in dysenteric fluxes: a decoction of half a dram is given for a dofe, and repeated at intervals of three or four hours,

SIT-FAST. A part of a horse's hide turned horny, and which if it cannot be diffolved, and foftened by rubbing with mercurial ointment, must be cut out, and afterwards healed as a fresh wound. It generally proceeds

from a warble.

SIZZING. Yeaft, or barm.

SKID. The chain by which the wheel of a waggon is fastened, so as to prevent its turning round, upon descending a steep hill.

SKILLING. An ifle, or bay of a

SKIRRETS. A kind of parfnep which thrive best in a light and moist foil. They are propagated either by feeds, or by flips from the root, which is composed of several fleshy fibres, about the thickness of a man's little finger, terminating in one head. This root, for which only the fkirret is cul-tivated, is reckoned wholfome and nourishing : but it is flatulent, and too fweet tasted for many palates. The feeds of this plant, which generally produce larger roots than the slips, should be fown about the end of March or the beginning of April, and if they are good, the plants will appear in five or fix weeks. When the have put out their leaves fo as to b well distinguished from weeds, the ground should be carefully hoed; and this should be repeated three several times, in the fame manner as is practifed for carrots. In these hoeings, which should be performed in as dry weather as possible, the better to deftroy the weeds, the skirrets, whether fown in broad-cast, or in drills, should be thinned the distance of at least three inches from each other. In autumn. when the leaves begin to decay, the roots will be fit for use. These may be preferred all the winter, and till they begin to (hoot in the fpring, when they will become hard and flicky. So will also those which run up to seed the first summer, and which should there-fore be pulled up and thrown away. The season for propagating skirrets by offsets is in the spring, before they

begin to fhoot. The old roots should be dug up then, and the fide roots fhould be flipt off with an eye or bud to each. These should be planted sour inches afunder, in rows sufficiently distant

to leave room for digging between them.
SLAB. The out-fide plank of a piece of timber when fawn into boards. SLECKS. Small pit coal.

Ladies SLIPPER, [Cypripedium.]
This plant must be taken in the place where it grows, and transplanted into the gardens.

SLOE TREE. See PLUM TREE

and BLACKTHORN.

SMALLAGE, [Apium graviolen.]
A plant growing naturally by the fides of brooks and ditches in many parts of England

Ragiand, and is rarely cultivated in gardens. Those however, who are gardens. Those however, who are fond of it in their pottage, may raise it in a moist soil, either by slips, or from seeds sown in March. This seed from seeds sown in March. This seed s reddiff, and pretty big, of a roundish oval shape, a little more full and rising on one fide than on the other, and streaked lengthwise.

SMUT. A difease in corn, which partially or totally defiroys the grain in the ear. When it is in the full height of its mischief, the whole inner sub-flance of the corn is black as ink, of a faint, naufcous tafte, a bad fmell, and of offenfive qualities, occasioning sick-ness in those who eat bread made of flour in which there was much of it. In this case, if the corn be bruised, and fleeped in water, it presently shews in-numerable worms, like little cels, diving in every part of it.

When the diforder is not arrived to

this full height, the inner substance of the corn is not then entirely hurt, but the outfide is spotted with black; and, in fome corns, a part of the flour within. This makes a great change in the matter; for the first is wholly destroyed, whereas the other may sometimes be recovered for certain uses,

though not for all fervices, England is more subject and is more subject to this diforder of corn than any other country we know; and this is owing to our wet fummers: in the warm and natually dry countries it is not known at it, or not in a degree worth notice. In Egypt no age ever faw a black

grain of any corn; for in Egypt they have no rain; and even in Italy it is little regarded now; and was fo flighted in earlier time, that all the Roman writers have not a name for it. There is not a word of fmut in the Latin language. The reader must not censure this affertion, if some modern writers, in that language, have attempted to name it: they hie words which pro-perly express blight and mildew: to both these the old Roman fields were subject, therefore they have terms to express them; but this was little known, and less regarded.

For the best known prevention of this difeate, we recommend good tilage, with a due course of crops and fal-ows; and particularly change of seed. In fallows we include turnips, &c.

SNAIL TREFOIL. See BASTARD

SNAKE WEED. Butort.

SNAKE ROOT, Birthwort.

Virginian SNAKE ROOT, Is a small, light, bushy root, confishing of a number of firings or fibres, matted together, issuing from one common head; of a brownish colour on the outside, and paler or yellowish within. It has an aromatic smell, like that of yalerian, but more agreeable; and a warm, bitterish, pungent taste. This root is a warm diaphoretic and diuretic it has been greatly celebrated as an alexipharmac, and effeemed one of the principal remedies in malignant fevers and epidemic discases. In these inten-tions, it is given in substance from ten to thirty grains, and in infusion to a dram or two

SNAIL-COD. A name given by Mr. Worlidge to a species of manure found at the bottom of deep rivers. It is a kind of mud or fledge, very foft, full of wrinkles, and intermixed with many little shells and snails, to which t is thought to owe a great part of its

fatness

SNAPDRAGON. Se CALTES

SNOUT.

American SNAPDRAGON, [Ruellia.] This plant grows naturally in the West-India Islands and Carolina, it is

West-India Islands and Carolina, at is propagated by seeds, but requires the assistance of a bark stove.

SNAP-TREE, [Justicia.] This plant is a native of India, rising with a shrubby stalk to the height of three or four seet, & is propagated by cuttings.

SNATHE. The handle of a scythe.

SNEEZEWORT, [Psarmics.] This grows wild upon heaths and in moist shady places; the flowers, which are of a white colour, come forth in June and July. The roots have an acrid fmell, and a hot biting tafte: chewed, they occasion a plentiful discharge of saliva; and when powdered and snuffed up the nofe, provoke fneezing. Thefe are the only intentions to which they have been usually applied.

SNOWDROP, [Galanthus.] This flower is valued for its early appear-

ance in the fpring, for it usually blows in February when the ground is often covered with fnow. The fingle fort comes out the first, and though the flowers are but fmall, yet when the roots are in bunches they make a very pretty appearance; therefore these roots should not be planted single, as is sometimes practised by way of edging to borders; for when they are so disposed, they make very little appearance. But when there are twenty or more roots growing in a close bunch, the slowers have a very good effect; and as these slowers thrive well under trees or hedges, they are very proper to plant on the sides of wood-walks, and in will derness quarters, where, if they are suffered to remain undisturbed, the roots will multiply exceedingly. The roots may be taken up the latter end of June, when their leaves decay, and may be kept out of the ground sill the may be kept out of the ground till the end of August; but they must not be removed oftner than every third or fourth year; these plants are got scarce in the gardens near London.

SNOWDROP-TREE. See FRINGE.

TREE

SNOWDROY-TREE. See FRINCE-TREE.

SOAP ASHES. See Ashes.

SOLDANEL, [Soldanella.] This plant is a native of the Alps, and the mountains of Germany, and may be propagated by parting the roots.

WATERSOLDIER, [Stratiotes.] Water Aloes, or Freshwater Soldier. This plant is like the aloes in shape, but the leaves are thinner and servated on the edges very sharply. It grows naturally in standing waters of the Isle of Ely, and other parts of England.

SOLOMON's SEAL, [Polygonatum.] This grows wild in woods, but is not very common: the root has several joints, with some state circular deprassions, supposed to resemble the stamp of a seal. It has a sweetish mucilaginous taste. As to its virtues, practitioners do not now expect any considerable ones from it, and pay very little regard to the vulnerary qualities which it was formerly celebrated for.

SOOT. Soot is of two general kinds, the one, that which arises from wood, the other that of coal. These differ very much in many respects, but they are nearly the same in their effects and value to the same. The wood

they are nearly the fame in their effects and value to the farmer. The wood foot is folid and thining, the coal foot loofer, and of a deader colour. The wood foot fells in London at a great price, in comparison of the other, for the use of chymists and apothecaries, because it is scarcer, the suel of Lon-You. II. don being, in general, coal: but in the country, where this is as common the country, where this is as common and cheap as the other, the farmers

and cheap as the other, the tarmers rather prefer coal foot.

Those who have written on husbandry, differ much in the kind to which they give the preference. Mortimer says sea-coal foot is by much the best, and Worlidge tells us, that foot is a good manure, especially such as is made of wood: these are both very homest and good arrivers but experience. made of wood: these are both very honest and good writers; but experience
is to be preserved to either. The truth
is, that neither kind deserves a general preservence, but that wood is
better for some soils, and coal soot
for others. Indeed the latter is best on
the greatest number of soils, and therefore the farmer is right in valuing it
the more. However, this difference
is not so great, that any danger can
arise from a mistake about it, for such
land as will do well with one kind of
foot, will also with another: all that
the best choice can do gives only a
little advantage:

little advantage:

As to the fulfing the particular kinds of foot to the different folls, the rule is this. For all clayey, chalky, and mosfly lands, the coal foot is beft. And this is the reason why the coal foot is most in repute in London for this traf-fick, because the Hertfordshire farmers, who buy it almost entirely, have, for the most part, clayey or chalky soils to

For gravelly, fandy, and loamy foils, the wood foot is preferable to that of coal: and in its nature indeed this kind is better and richer than the other, because, being made from a vegetable substance, it is richer and warmer than that other which comes from a mineral origin; but the great reason of the difference which suits one kind to one soll, and another to another, is the confidence. The wood soot is in firmer and harder sumps; the coal soot is crumbly; now in a clayey or a mosty soil, the sumps of the wood soot would lie a long time unbroken, whereas the coal soot breaks and mixes immediately. Experience shews also, that the wood soot will lie in large pieces a long time in a chalky land; whereas the gravelly sands, and sandy loams, cut and break it to pieces in two or three ploughings, and spread and mixit thoroughly.

S \$ kind is better and richer than the other

SOPEBERRY-TREE, [Sapindus.]
This plant grows naturally in the
West-Indies, and rifes with a woody stalk, to the height of 20 to 30 feet, bearing flowers in loose spikes at the end of its branches, succeeded by oval berries as large as middling cherries; the covering of these berries is sometimes yied for foap to wash, when it

is propagated by feeds.

SOPEWORT, [Saponaria.] This grows wild, though not very common, in low wet places, and by the fides of running waters; a double flowered fort is frequent in our gardens. The leaves have a bitter, not agreeable tafte; agitated with water, they raife a saponaceous froth, which is said to have nearly the same effects with solutions of soap itself in taking out spots from cloths, and the like. The roots taste sweetile and some saids sweetile and some saids tafte fweetish and somewhat pungent; and have a light finell like those of li-quorice : digested in rectified spirit they yield a frong tincture, which lofes noinspiffated to the confishence of an extraft. This elegant root has not come anuch into practice among us, though it premises, from its sensible qualities, to be a medicine of considerable utility : it is greatly effeemed by the German physicians as an aperient, corro-borant, and sudorific: and preferred by the college of Wirtemberg, Stahl,

Neumann, and others, to far aparilla.

SORREL, [Aceto]a.] Sorrel grows wild in fields and meadows throughout England. The leaves have a refiringent acid tafte, without any fmell or particular flavour: their medical effects are, to cool, quench thirft, and promote the urinary discharge: a decoction of them in whey affords an useful and agreeable drink in frebile or inflammatory disorders: and is re-commended by Boerhave to be used in the spring as one of the most efficaci-ous aperients and detergents. Some kinds of scurvies have yielded to the continued use of this medicine: the Greenlanders, who are very subject to this distemper, are said to employ, with good success, a mixture of the juices of sorrel and of scurvygrass. The only officinal preparation of this plant is an essential salt from the juice of the leaves. or inflammatory diforders : and is re-

WOOD SORREL, [Ligula:] This is

a small plant, growing wild in woods. In taste and medical qualities, it is similar to the common forrel, but confiderably more grateful, and hence is preferred by the London college. Boiled with milk, it forms an agreeable whey; and beaten with sugar, a very elegant conferve, which has been for some time kept in the shops, and is now re-ceived in the dispensatory.

SOURSOP. See Custard Apper.

SOIL. A general name for all forts

of land.

SOURLAND. A cold, hungry,

clayey foil.

SOUTHERNWOOD, [Abrotanum Mas.] This is a shrubby plant, clothed with very finely divided leaves, of a greyish green colour: the flowers, which are very small and yellowish, hang downwards, several together, from the middle of the branches to the top. It is a native of the warmer countries; in this it is cultivated in gardens: the leaves fall off every winter: the roots and stalks abide many

Southernwood has a strong, not very disagreeable smell; and a nause-ous, pungent, bitter taste; which is totally extracted by reclined spirit, less totally extracted by reclified spirit, less perfectly by watery liquors. It is recommended as an anthelminitic; and in cold leucophlegmatic habits, as a slimulant, detergent, aperient, and sudorific. The present practice has almost entirely confined its use to external applications. The leaves are frequently employed in discutient and antiseptic somentations; and have been recommended also in lotions and unrecommended also in lotions and un-guents for cutaneous eruptions, and the falling off of the hair.

SOW. The female of the swine.

SOWING. The act of distributing

feed on the ground to produce a crop.

SOWBREAD, [Cyclamen.] This plant is met with in the gardens of the curious. The root has, when trefh, an extremely acrimonious burning tafte, which it almost entirely loses on being dried. It is recommended as on being dried. It is recommended as an errhine; in cataplaims for schirrous and feropholous tumours; and internally as a cathartic, detengent, and aperient; it operates very flowly, but with great virulence, inflaming the fauces and inteffines; and hence is defervedly rejected from the London

dispensatory, though retained in that

SOWTHISTLE, [Souchus.] This is a troubleforme weed both in gardens and fields, and should be taken care of, that the feeds be not fuffered to ripen, and be scattered by the wind.
SPANISH NUT. See FILBERT.

SPANISH ROSEMARY, [Paperinu.]
Sparrow-wort. This plant grows naturally at the Cape of Good Hope, rifing with a shrubby stalk five or fix feet high, and may be propagated by cuttings; sheltering the plants in the greenhouse during winter.

SPANISH BROOM, [Spartium.] This plant has long held a place in the English gardens, and is easily propagated by feeds. There are several species

kept for variety.

SPANISH ELDER. See Spanish ELDER.

SPANISH PICKTOOTH, [Vifnaga:] A species of carrot, growing naturally in Spain and Italy; the footfalks of the flowers are used as tooth picks.

Spainish Marjoram, [Uffice Dodartia.] This is a species of nettle,

growing naturally in Spain, and is easily propagated by feeds,
SPADE, A well-known inflrument used in digging.

SPANCEL. A rope to tye a cow's

SPATLING-POPPY: See CHICK-

SPARSED-LEAVES. Are those which are placed irregularly about the

feveral parts of a plant,
SPAVIN. A difease in horses, being a swelling in or near some of the joints, that caufes a lamenofs,

There are two kinds of spavin, called a blood-spavin; and a bog-spavin. A blood-spavin is a swelling and dilatation of the vein that runs along the infide or the book, forming a little foft fwelling in the hollow part, and is often attended with a weakness and lameness of the hock;

The cure should be first attempted with reftringents and bandage, which will contribute greatly to ffrengthen all weaknesses of the joints, and fre-quently will remove this disorder, if early applied : but if by thefe n the vein is not reduced to its usual di-mensions, the skin should be opened, and the vein tied with a crooked needle and wax thread paffed underneath

it, both above and below the fwelling,

it, both above and below the swelling, and the turgid part suffered to digett away with the ligatures: for this purpose, the wound may be dressed with turpentine, honey, and spirit of wine, incorporated together.

A bog-spavin is an encysted tumour on the inside the hough, or, according to Dr. Bracken, a collection of brownish gelatinous matter, contained in a bag, or cyst, which he thinks to be the subricating matter of the ions as the lubricating matter of the joint altered, the common membrane that in-closes it forming the cyft: this case he has taken the pains to illustrate in a young colt of his own, where he fays, when the spavin was pressed hard on the inside of the hough, there was a small tumour on the outside, which convinced him the fluid was with fide the joint; he accordingly out into it, discharged a large quantity of this gelatinous matter, dressed the fore with doffils dipped in oil of turpentine, put ting into it, once in three or four days

doffils dipped in oil of turpentine, putting into it, once in three or four days,
a powder made of calcined vitriol, ililum and bole: by this method of dreffing, the bag floughed off, and came
away, and the cure was fuccesfully
compleated without any visible fear.

This diforder, according to the above
description, will scarcely submit to any
other method; except firing, when the
cyst ought to be penetrated to make it
effectual; but in all obstinate cases
that have resisted the above methods,
both the cure of this, and the swellings
called wind-galls, should, we think, be
attempted in this manner. If, through
the pain attending the operation or
dressings, the joint should swell and
instane, soment it twice a day, and
apply a poultice over the dressings till
it is reduced;

SPAYING. The operation of castrating the semales of several kinds of
animals, as sows, bitches, &c. to prevent any sarther conception, and promote their fattening.

It is performed by cutting them in
the mid flank, on the left side, with a
sharp knife or lancet, taking out the
uterus and cutting it off, and so stitches

tharp knife or lancet, taking out the uterus and cutting it off, and so stitching up the wound, anointing the part with tar, and keeping the animal warm for two or three days. The usual way is to make the incision aslope two inches and a half long, that the fore finger may be put in towards the back Sf2

to feel for the ovaries, which are two kernels as big as acorns on both fides of the uterus, one of which is drawn to the wound, the firing thereof cut,

and thus both taken out.

Kings SPEAR. See Asphodel.

SPEAR MINT. See MINT.
SPEEDWELL, [Veronica.] There are feveral species of this plant growing wild in different parts of the kingdom, as also in other parts of Europe, the Female Speedwell is admitted into the Materia Medica, as is also the Male Speedwell, The Male Speedwell is a rough procumbent plant, not unfrequently met with on dry commons, and in landy grounds. In tafte, fmell, and medical virtues, it is fimilar to the betonica, of which in its place: though the veronica is commonly supposed to have more of an aperient and pectoral virtue, and betony to be rather nervine and cephalic. Hoffman and Joh, Francus have written express ireatifes on this plant, recommending infusions of it, drank in the form of tea, as very falubrious in many diforders, particularly those of the breast. For Female Speedwell, fee FLUBLLIN.
SPELT. The name of a species of SPELT. grain, which though commonly reck-oned a fummer corn, is fowed either in autumn or in the fpring, at the fame time as wheat and rye. This grain, of which there are two forts, one with a fingle, and the other with a double chaff, though both have always two chaff, though both have always two feeds in each hufk, was formerly much efteemed in Italy and Egypt, and is now very common in Germany, where they make of it bread, which is very mourithing and well-tafted, but hard to digeft. They likewife brew beer from it in fome places, It was of this grain that the ancients made their frumenty, they have were very fond. Though of which they were very fond. Though commonly ranked as a species of wheat, which it is not unlike when growing, its grain is smaller and of a blackish hue, its stalk thinner and less firm, and its ear flat and bearded, with feeds only on each fide. Some writers diftinguish a third fort, by the name of white-rye, which they take to be the olyra of the Greeks and Latins; and feems to be what Mr. Mortimer calls taitico-speltum, a fort of naked barley, or wheat barley, cultivated in Stafford-fhire, fhaped like barley, but with a

grain like wheat. It is much fown at Rowley, Hamftal, and Redmore, where they call it French barley. It makes good bread and good malt, and yields a good increase; and therefore would do well to be tried in other places. It ripens early, does best in a dry soil, and is not apt to be much hurt by birds, from which its beard and double hulk preferve it, SPIDERWORT. See African As-

PHODEL,

SPIGNEL, [Athamanta.] Spignel is an unbelliferous plant, found wild in Italy, and the warmer parts of Europe, and fometimes also in England. The roots have a pleafant aromatic fmell, and a warm, pungent, bitterish taste: in virtue, they are fimilar to to differ only in being weaker, and fomewhat more agreeable. It is an ufeful aromatic and carminative, the

at present little regarded. SPIRE, SPIRE LAVENDER. SEE Levender. SPINACH, [Spinacia.] A well-known plant, cultivated in kitchen gardens

It requires a rich, light, and well loofened foil. It is propagated by its feeds only, of which there are two forts, namely, the rough and prickly, which produces the prickly spinach with arrow-pointed leaves, and the smooth, from which springs the spinach with oblong oval leaves.

The feeds of the first of these kinds, which is by much the hardiest, and therefore fittest to be cultivated for winter bie, thould be fown upon an open fpot of ground, in August, just before a shower of rain, if it can luck-ily be so timed: for if the season should prove dry for a long while after the sowing, many of them will not sprout at all, and the plants of those that do grow will come up fo irregularly, that half the crop will frequently be loft. It therefore is highly adviseable to water thefe feeds within two or three days after their being fown, if rain does not fall in the mean time.

When the plants begin to be ftrong, the ground on which they grow should be well hoed, to destroy the weeds, and to thin the plants to the distance of three or four inches afunderr, This,

like all other hoeings, should always be performed in dry weather, the more effectually to kill the weeds: or, if it be rainy, they should be carried off the ground as foon as they are cut up, to prevent their taking fresh root: for if many of them fpring up, and the fea-fon prove wet, they will fifthe the plants of the spinach, and make them rot. of the ipinach, and make them rot, A fecond careful hoeing is therefore necessary in about a month or five weeks after the first; and with the help of this the spinach will begin to he fit for use by the end of October. The best way of gathering it is, to crop off only the largest outer leaves, and to leave the middle ones to grow bigger; for by this means a regular bigger: for by this means a regular capply may be had during the whole winter, and even till the fubfequent spring sowing shall have produced plants large enough for use, which geprants large enough for the, which generally is in April. The winter spinach will also then be ready to run up, and should therefore be entirely cleared off, unless a parcel be lest for feed, if wanted. But if early cabbages, which will want earthing up, have been planted among this spinach, as is the usual practice of the gardeners about London, a separate small spot of ground should be allotted purposely for sowing fome of this spinach for feed, without any other plants among it, and to cut up all the remains of the other winter crop, as foon as the fpring spinach is fit for use.

The oblong oval leaved Ipinach, commonly called plantain spinach, which has thicker leaves and more succulent stalks than the former fort, is fown in the fpring, likewife upon an open spot of fine rich earth. The London gardeners, who always endeavour to have as many crops in a season as they possible can, generally mix radish seed with those of the spinach which they sow at this season; but the best way for those who have ground enough, is to sow their spinach seeds alone. This crop must be hoed, cleared from weeds, and thinned, in the manner before directed for the winter spinach; and when the plants, which were at first left three or four inches afunder, have grown to as to meet, it will be right to cut them out here and there for use, and to thin them in this manner, as they are wanted for the table, till those that are left fland eight ort en inches afunder. The thinnings in the mean time will give the remaining plants room to foread; and if, after this last, the ground between them is well firred to a good depth, and kept perfectly clear from weeds, this fort of spinach will frequently produce leaves as large as those of the broad-leaved dock, and extreme-

A fucceffion of fpinach may be had throughout the whole featon, by fowing it every three weeks, from about
the middle of January to near the end
of May; only observing, that the earliest sowings must be upon the naturally driest foils, and that the latest should be thinned most at their first hoeing, because the remains of the former crops will farnish a supply till these are full grown, and the plants will not be fo apt to run up to feed when they fland at a diffance from each other, as when they are close to-

In order to have good feeds of fpi-nach, each particular fort should be fown by itself, in an open spot of rich and well dig ground. This fowing should be in February, as soon as the danger of the frost is over; and when the plants are come up, they should be thinned with a hoe till they are six or eight inches afunder every way. All weeds should at the same time be carefully cut up and carried off; and in about three weeks or a month after this, the plants should be heed and thinned a second time. Their distance from each other should then be en-larged to at least twelve or sourcen inches: for they will cover the ground very fufficiently after they have that out their fide branches. Particular care is requifite at this time to keep them very clear from weeds; because these would make the plants of spi-nach run up weak, and thereby greatly injure them.

Mr. Miller is here extremely judicious in his directions for the farther management of spinach intended for feed. "When the plants, fays he, have run up to flower, you will eafily perceive two forts among them, viz. male and female. The male will produce spikes of samineous flowers, which contain the farina, and are ab-

folutely necessary to impregnate the embrios of the female plants, in order to render the feeds prolific. These male plants are, by the gardeners, commonly called the spinach, and are often, by the ignorant, pulled up as foon as they can be diftinguished from the female, in order, as they pretend, to give room for the feed bearing to spread : but, from several experiments which I have made on these plants, I find that, where ever the male plants are entirely removed before the farina is fined over the female plants, the feed which they produce will not grow, fo that it is absolutely necessary to leave a few of them in every part of the spot, though a great many may be drawn out where they are too thick; for a fmall quantity of male plants (if rightly fituated) will be fufficient to impregnate a great number of female, because they greatly abound with the farina, which, when ripe, will spread to a confiderable diffance, when the plants are shaken by the wind."

When the feeds begin to ripen, they must be guarded from birds; and when they are thoroughly ripe, which is known by their changing their co-lour, and beginning to fied, the plants should be drawn up, and spread upon cloths for a few days, to be completely dried by the heat of the sun. That they may be perfectly so, they should he turned every other day; and when they are quite dry, they should be threshed out, well cleaned, and laid up in a dry place, where mice, which are exceffive fond of this food, cannot

come at them.

SPINDLE-TREE. Prickwood.
African SPINDLE-TREE, [Celaftrus.] There are three or four species growing naturally in North-America, in Ethiopia, and the Cape of Good Hope; they feldom rife higher than eight or ten feet, and the Ethiopican fort not fo high; they are propagated by layers or cuttings

SPINDLING. Running to feed. SPILTER. An instrument used by gardeners in digging the ground;

SPLEEN WORT, [Afplenium.] This is a small bushy plant growing upon rocks and old walls. It has an herbaceous, fomewhat mucilaginous, roughish tafte: it is recommended as a pectoral, and for promoting urine in nephritic cases. The virtue which it has been most celebrated for, is that which it has the least title to, dimi-nishing the spleen.

Rough SPLEENWORT, [Lonchitis.] This is a very common plant in shady woods, by the sides of small rivulets, in many pars of England, but is feldom ad-

mitred into gardens except for variety.

SPLENT. A hard excrescence growing on the shank bone of a horse.

Some horses are more subject to splents than others; but young horses are most liable to these infirmities. which often wear off, and difappear of themselves. Few horses put out splents after they are 7 or 8 years old, unless they meet with blows or accidents.

A splent that arises in the middle of the fhank-bone is no ways dangerous; but those that arise on the back part of this bone, when they grow large and press against the back sinew, al-ways cause lameness or sickness, by rubbing against it; the others, except they are fituated near the joints, feldom occasion lameness

As to the cure of splents, the best way is not to meddle with them, unlefs they are so large as to disfigure a horse, or are so fituated as to endanger his going lame.

Splents in their infancy, and on their

first appearance, should be well bathed with vinegar, or old verjuice; which, by firengthening the fibres, often put a ftop to their growth; for the membrane covering the bone, and not the bone itself, is here thickened; and in fome conflitutions purgings, and af-terwards diutetic drinks, will be a great means to remove the humidity and moisture about the limbs, which is what often gives rife to fuch excrescences.

Various are the remedies prefcribed for this disorder; the usual way is to rub the splent with a round slick; or the handle of a hammer, till it is almost raw, and then touch it with oil of origanum. Others lay on a pitch plaister, with a little sublimate, or arsenic, to destroy the substance: some use oil of vitriol; some tincture of catharides; all which methods have at times succeeded; only they are apt to leave a scar with the loss of hair. Those applications that are of a more caustic

nature often do more hurt than good, especially when the splent is grown very hard, as they produce a rotten-ness, which keeps running several months before the uleer can be healed,

and then leaves an ugly fcar.

Mild blifters often repeated, as reshould first be tried as the most eligible method, and will generally succeed, even beyond expectation; but if they fail, and the splent be near the knee or joints, you must fire and blister in the same manner as for the bone-spavin,

Splents on the back part of the shank-bone, are difficult to cure, by reason of the back sinews covering them; the best way is to bore the splent in feveral places with an iron not very hot; and then to fire in the common

way, not making the lines too deep, but very close together.

SPONGE, [Spongia.] Sponge; a foft, light, very porous, and comprefible substance, readily imbibing water, and distending thereby. It is found and diffending thereby. It is found adhering to rocks, particularly in the Mediterranean fea, about the islands of the Archipelago. It is generally fupposed to be a vegatable production; nevertheless some observations lately made by Justieu, give room to suspect that it is of animal origin. Chemical experiments fayour this fupposition; analysed, it yields the same principles with animal fubstances in general: the volatile falt is in larger quantity than we have obtained from any animal matter, except the bags of the filk-worm. On this falt, which is gene-rated by fire, feem to depend the virtues of the officinal spongia uffa. Crude sponge, from its property of imbibing and diffending by moisture, is somewounds and ulcers.

SPOONWORT. Scurvy grafs. To SPRAIN SEEDS. Signifies, to throw them with a fingle motion of the hand at a certain distance from one another.

SPRIG. A fmall branch, a fpray. SPRING. The feafon in which plants vegetate,

Spring also fignifies a fountain, or

iffue of water from the earth.

SPURGE, [Tyshmalus.] Several forts of spurge are mentioned in catalogues of the materia medica, The

Edinburgh college, in their last edi-tion, retained two (Esula Major, tithymalus palustris funticosus, German spurge; and Esula Minor, tithymalus foliis pini, C. B. pine-fpurge;) both the Edinburgh and London colleges have now rejected them all.

The spurges and grana cnidia are ex-tremely acrid, irritating cathartics, and operate with so much violence as to be altogether unfit for internal wfe.

SPURGE LAUREL. See Spurge LAUREL.

OLIVE. See Spurge SPURGE LAUREL

SPURRY, [Spergula.] There are feveral species of this plant, growing naturally as weeds in England, and two are cultivated in Holland and Flanders for feeding their cattle; the usual time for sowing the feed is in July or August, that the plants may acquire strength before the winter's cold. The use that is made of this is cold. The use that is made of this is to feed sheep, and other cattle, in winter and fpring, when the common grafs fails. This plant feldom rifes ab fairs. I mis plant leidom riles above fix inches high, so will not afford a very great quantity of sood; but as it will grow on the poorest land, it may be cultivated in many places to good advantage, where no other grass will above to good advantage, where no other grass will and by fredients. thrive fo well, and by feeding it off the ground, the dung of the cattle will improve the land. This pasture, it is affirmed, will make excellent butter, and the mutton fed on it is faid to be well tafted, so is by many preferred to that fed on turneps. Hens will greed-ily eat this herb, and it makes them lay more eggs.

This plant being annual, must be fown every year; and whoever is willing to fave the feeds, should sow it in
April, that the plants may flower the
beginning of July, and the seed will
ripen in August; when it must be cut
before the heads are quite brown,
otherwise the seeds will soon scatter.

The seeds being very small, about
twelve pounds will be sufficient to sow
an acre of land. The ground should

an acre of land. The ground should be well harrowed before the seeds are fown, for if the larger clods are not broken, there will be an uneven crop of grafs. People in the low country fow this feed after a crop of corn is ta-ken off the land. The fecond fort is now much cultivated in Flanders,

though it is a much lower plant than the common fort, but they esteem it a much better grass. The seeds of a much better grass. The seeds of this kind are smaller and flatter than those of the common fort, and have a

white border round each.
To SPRIT, To thoot or sprout, as

To SPRIT. To corn in vegetation. SPARREWAY. SPARREWA:
through inclosed lands.
SPROUTHILL. Anthill,
SQUASH, See GOURD. A horse - way

SQUASH. See GOURD.
SQUILL, [Scilla.] There are two forts, one with a red, and the other a white root, which are supposed to be accidental varieties, but the white are generally preferred for medicinal use. The roots are large, fomewhat oval-shaped, composed of many coats, lying over each other like onions; at the bottom come out feveral fiores. From the middle of the root arise several shin-ing leaves, which continue green all the ing leaves, which continue green all the winter, and decay in the spring; then the flower-stalk comes out, which rises two feet high, is naked half way, and terminated by a pyramidal thyrse of slowers, which are white, composed of fix petals, which spread open like the points of a star. This grows naturally on the sea-shores, and in the ditches, where the salt water flows with the tide, in most of the warm parts of Europe, so cannot be propaparts of Europe, fo cannot be propagated in gardens, the frost in winter always destroying the roots, and for want of salt water they do not thrive in summer. Sometimes the roots, which are brought for use, put out their stems, and produce flowers without being planted in earth, as they lie in the

druggifts shops,

The root for medicinal nse should be chosen plump, found, fresh, and full of a clammy juice; some have preferred the red fort, others the white, though neither deferves the preference to the other; the only difference perceivable betwixt them, is that of the colour; and hence the college allow both to be used promisequously. This root is to the taste very nauseous, intenfely bitter and acrimonious: much handled, it exulcerates the ikin. With regard to its medical virtues, it powerfully flimulates the folids, and attenuates vifcid juices; and by these qualities, promotes expectoration, urine, and (if the patient is kept warm)

fweat: if the dofe is confiderable, it proves emetic, and fometimes purga-tive. The principal ule of this medicine is where the prime viz abound with mucous matter, and the lungs are oppressed by tenacious phlegm. are oppressed by tenacious phlegm, Dr. Wagner (in his clinical observations) recommends it given along with nitre, in hydropical swellings, and in the nephritis; and mentions several cures which he performed, by giving from four to ten grains of the powder for a dose, mixed with a double quantity of nitre: he says, that thus managed, it almost always operates as a diuretic, though sometimes it vomits or purges. The most comit vomits or purges. The most com-modious form for the taking of squills, unless when designed as an emetic, is that of a bolus or pill: liquid forms are to most people too offensive, though these may be rendered less disagreeable both to the palate and stomach, by the addition of aromatic distilled waters. There are several species of squills,

kept for the beauty of their flowers, befides those for medicinal purposes; among which are the flowers called the

among which are the flowers called the Starry Hyacinth, and the Hyacinth of Peru; they are all hardy, and propagated by feeds or offsets.

STABBING of Cattle. See Hoven.

STAGGERS. See APOPLEXY.

STAFF Tree. See SPINDLE TREE.

STAGGERWORT. See Ragwort.

STAKE. A piece of wood, or a frong flick fixed in the ground. frong flick fixed in the ground.

STALE. Urine.

STALE. Urine. STALK. The flem or flock of a

plant.

STALL. A crib at which an ox is or where any horse is kept in a stable.

STALL-FED. Fed with dry feed,

not with grafs

STALLION. STALLION. A stone horse, de-signed for the covering of mares, in order to propagate the species. STAMINA. Those sine threads on

capillaments growing up within the flowers of tulips, lillies, and most other plants, around the style or pistil.
STAMINEOUS. An epithet ap-

plied to those flowers of plants which have no petals or flower-leaves, but confift only of a number of stamina and

piftils placed in a cup.

The roots of trees grubbed up.

STANDARDS.

STANDARDS, or STANDERLO.

Young trees referred at the felling of woods, for the growth of timber.

STANDARDA. Fruit-trees, intended to grow in an open exposure, and not to be hacked and mangled with the knife, as the dwarf trees, and those

planted against walls are.

These stocks should not exceed two years growth from the bud or graft when they are planted. They should be fastened to stakes till they have acquired sufficient strength not to be in danger of being blown down.

STANK. A dam, or bank to stop

STAR APPLE, [Chrysophillum.]
This tree grows naturally in the West-Indies, rising to the height of thirty or forty feet, hearing an auftere fruit about the fize of a golden pippin, which however becomes mellow and agreeable by keeping. It is propagated by feeds, but in England requires the general affiftance of tender exotics.

STAR of Bethlehem, [Ornithogolum; his plant grows naturally near Brit. This plant grows naturally near Brif-tol, and fome other parts of England. It has a pretty large bulbous root, from which come out feveral long ke fhaped leaves, which fpread on the ground. There are feveral other species growing naturally in Spain, Portugal, Africa, and Arabia.

STARCH. The finest parts of wheat flour manufactured into cakes,

wheat floure menufactured into cakes.

STAR HY ACINTH. See SQUILL.

STARWORT. See ASTRA.

Yallow STARWORT. Elecampane.

STAYES ACRE, [Staphidiggria.]

This is a species of the larkspur, growing naturally in the Levant and some parts of Italy. The feeds are large and rough, of an irregular triangular figure, of a blackish colour on the outside, and yellowish or whitish within; they are usually brought from Italy; the plant is not very common in this country, though it bears, our severest colds.

They have a disagreeable smell, and a They have a difagreeable fmell, and a very naufeous bitterift, burning tafte, Stavefacre was employed by the ancients as a cathartic; but it operate with fo much violence both upwards and downwards, that its internal use has been, among the generality of prac-titioners, for fome time laid afide. It is chiefly employed, in external appli-cations, for fome kind of cutaneous VQL. II.

other infects; infomuch, that it has from this virtue received its name in different languages, herba pedicularis, herbe our pour, languages, languages, STEE. A ladder, eruptions, and for deftroying lice and

STEEN. That part of a plant ari-fing from the root, and which fuffains the leaves, flowers, fruits, &c. STEEPS. Certain preparations for fleeping of corn intended to be fown. STELE. A flalk, a handle. STEER. A groupe bullock

STEER. A young bullock.
STEG. A gander.
STERCORARY. A collection of

dung properly secured from any inju-ries of the weather.

STERILE. Barren, unfruitful.

STEW. A small kind of fish-pond,

the peculiar intention of which is to maintain fifth, and keep them for the daily uses of a family.

STICK ADORE. See Cassidony.

STOCK. The trunk or body of a

fruit-tree, into which the graft, or bud is inferted.

STOCK GILLIFLOWER. See GIL-

DWARP STOCK GILLIPLOWER.

STONE. A certain quantity or weight of fome commodities.

ight of fome commodities.

A stone of beaf in London is the

A flone of beef in London is the quantity of eight pounds; in Herefordshire, twelve pounds; in the north 16 pounds; in other parts, 14 pounds.

A flone of wool, according to a statute made in the eleventh year of the reign of Henry VII. is to weigh fourteen pounds, but in some places it is more, in others less; as in Glocestershire fifteen pounds, in Herefordshire twelve pounds.

A stone, among horsemen, is the weight of sources.

veight of fourteen pounds.

STONE BREAK. A perennial plant common in passure grounds. The root has a sharpish and aromatic taste. The stalks are round, streaked, and reddish towards the bottom. The leaves are smooth, of a dark green, and divided twice into long, narrow, share segments. The soot-stalks are membraneous at the bale. The slower braneous at the bale. grow in loofe umbels; and are of a pale yellow colour. The feeds are oval, fireaked, and red at the top.

STONY Lands. Such as are full of flints, pebbles, or imali fragments of Tt.

free-flone.

free-flone. Thefe lands, in many places, yield good crops, and the general rule is, that in fliff and cold lands the stones should be as carefully picked out as possible, but in light and dry grounds they should be left. In Oxfordshire they have great quantities of a lean earth, and a small rubble stone, or a four fort of land mixed with it; this is fometimes very full of weeds, fometimes very clear of them. If they are weedy they fallow them late; but if they are feary, as they call it, that is, it they have a fward upon them, they either fold them in winter, and add forme hay leed to the fleep's dung, to bring up the grafs; or elfe they lay old thatch or ftraw, and dung upon it; for they reckon that if those lands have no fward upon them before they are fallowed, they will by no means be brought to bear a good crop, but a great deal of May-weed, and other useles weeds. In September, November, and December, they fallow as the fward directs them; if this be done in either of the two last months, they call it a winter fallowing; and never fir it again, till they plow it, and fow it with barley; and those lands are reckoned to do better than if finely tilled. They will bear wheat and mession in a kindly year, and large crops of barley, if they are well managed, and kept in good heart.

They always fallow these lands every other year, unless they sow pease upon them; sometimes they sow them with lentils, and when they are quite worn out, they say them down for clover or rey grass.

STONE CROP. Wall pepper.
Free STONE CROP. Goole foot.
STOOMING of Wine. Putting bags of herbs, of other ingredients into it.
STOOP. A post fixed in the earth.
STOT. A young bullock; a fteer.
STOVES. Buildings erected in gar-

STOY. A young bullock; a freer, STOVES. Buildings erected in gardens for the prefervation of tender exotic plants, which will not live in these northern countries, without artificial warmth in winter. These are built in different methods, according to the ingenuity of the artist, or the different purposes for which they are intended; but in England they are at present reducible to two.

The first is called a dry stove, being fo contrived, that the flues through

which the smoke passes are either carried under the pavement of the floor, or else are crested in the back part of the house, over each other, and are returned 6 or 8 times the whole length of the stove. In these stoves are commonly placed the tender forts of aloes, cereus's, euphorbiums, tithymals, and other succelent plants, which are impatient of moisture in winter; and therefore require, for the most part, to be kept in a separate stove, and not placed among trees, or herbaceous plants, which perspire freely, and thereby often cause a damp air in the house, which is imbibed by the succession.

lent plants, to their no finall prejudice.

These stoves may be regulated by a thermometer, so as not to over-heat them, nor to let the plants suffer by cold; in order to which all such plants as require nearly the same degree of heat, should be placed by themselves in a separate house; for is in the same stove there are plants placed of many different countries, which require as many different heats, by making the house warm enough for some plants, others, by having too much heat, are drawn and spoiled.

The other forts of floves are commonly called bark floves, to diffinguish them from the dry stoves already mentioned. These have a large pit, nearly the length of the house, three feet deep, and fix or leven feet wide, according to the breadth of the house; which pit is filled with fresh tanner's bark, to make an hot-bed; and in this bed the pots of the most tender exotic trees, and herbaceous plants, are plunged; the heat of this bed being moderate, the roots of the plants are always kept in action; and the mosture, detained by the bark, keeps the fibres of their roots in a ductile state, which, in the dry stove, where they are placed on fhelves, are subject to dry too fast, to the great injury of the plants. In thefe floves, if they are rightly contrived, may be preferred the most tender exotic trees and plants, which, before the ule of the bark was introduced, were thought impossible to be kept in England; but, as there is some skill required in the structure of both these stoves, we shall describe them as intelligibly as possible, particularly the bark stove; by which it is hoped every curious

person will be capable of directing his workmen in their Arudure,

The dimension of this stove should be proportioned to the number of lants intended to be preferred, or the articular fancy of the owner; but their length thould not exceed forty feet, unless there are two fire-places; and in that cafe, it will be proper to make a partition of glass in the middle, and to have two tan-pits, that there may be two different heats for plants from different countries, for the reafons before given in the account of dry thoves; and a range of stoves, they should be all built in one, and only divided with glass partitions, at least the half way toward the stone; which will be of great advantage to the plants because they may have the air in each division shifted by sliding the glasses of the partitions, or by opening the glass-door, which should be made between each divition, for the more easy passage from one to the other. This stove should be raised above

the level of the ground, in proportion to the dryness of the place; for, if it be built on a moist fituation, the whole should be placed upon the top of the ground; fo that the brick-work in the front must be raised three feet above the furface, which is the depth of the bark-bed, whereby none of the bark will be in danger of lying in water; but, if the foil be dry, the brick work in front need not be more than one foot above-ground, and the pit may be funk two feet below th furface. Upon the top of this brick work, in front, must be laid the plate of timber, into which the wood work of the frame is to be mortifed; and the upper timber in front must be placed sour seet afunder, or somewhat more, which is the proportion of the width of the glafs-doors or fathes: these should be about fix feet and a half, or seven seet long, and placed upright; but from the top of these should be floping glasses, which should reach within three feet of the back of the flove, where there should be a ftrong crown-piece of timber placed, in which there should be a groove made for the glaffes to flide into. The

cause, the thicker the outside wall Is built, the more the heat of the flue will be kept in the house; and carried up, about nine seet above the surface of the bark-bed; and from the top of this wall, there thould be a flo roof to the crown-piece where the glaffes flide in. This crown-piece should be about fixteen feet high from the furface of the bark-bed or floor, which will give a fufficient declivity to the floping glaffes to carry off the wet, and be of a reasonable height for con-taining many tall plants. The back roof may be flated, covered with lead, or tiled, according to the fancy of th owner: for the manner of this outlide building is often very various, an

differently built.

In the front of the house there should be a walk, about eighteen or twenty inches wide, for the conventency of walking; next to which the bark pit must be placed, which should be in width proportioned to the breadth of the house: if the house is twelve feet wide, which is a due proportion, the pit may be feven feet wide; and behind the pit should be a walk eight-cen inches wide, to pass in order to water the plants, &c. then there will be twenty-two inches left next the back wall, to creet the flues, which must be all raised above the top of the bark-bed; thefe flues ought to be one foot wide in the clear, that they may not be too foon stopped with the foot; and the lower stue, into which the smoke first enters from the fire, should be two feet deep in the clear; and this may be covered either with caftiron plates, or broad tiles; over this the fecond flue must be returned back again, which may be eighteen inches deep, and covered on the top as before; and fo, in like manner, the flues may be returned over each other three or four times, that the heat may be spent before the smoke passes off. The thickness of the wall in front of these flues need not be more than four inches; but it must be well jointed with mortar, and plaistered within side to prevent the smoke from getting into the house; and the outside should be faced with mortar, and covered wall in the back part of the flove with a coarse cloth, to keep the mortar should be at least thirteen inches thick; from eracking, as is practised in setting but eighteen inches is still better; be-up coppers. If this be carefully done T 112

there will be no danger of the moke entering the house, which cannot be too carefully avoided; for there is nothing more injurious to plants than smoke, which will cause them to drop their leaves; and if it continue long in the house, will entirely destroy

The fire place may be made either at one end, or in the middle, according as there is most conveniency; for, whereever it is placed, it should have a shed over it, and not be exposed to the open air; for it will be impossible to make the fire burn equally, where the wind has full ingress to it; and it will be troublesome to attend the fire in wet weather, where it is exposed to the rain.

The contrivance of the furnace must be according to the fuel which is defigned to burn; but as turf is the best firing for stoves, where it can be had, because it burns more moderately, and so requires less attendance, I shall describe a proper fort of surnace for that purpose.

The whole of this furnace should be erected within the house, which will be a great addition to the heat; and the front wall on the outlide of the fireplace, next the flied, should be three bricks thick, the better to prevent the heat from coming out that way. The door of the furnace, at which the fuel is put in, must be as small as conveni-ently may be to admit of the fuel; and this soor should be placed near the upper part of the furnace, and made to thut as close as possible; so that there may but little of the heat pass off through it. This furnace should be about twenty inches deep, and fixteen inches square at the bottom, but may be floped off on every fide, fo as to be two feet square at the top; and under this furnace should be a place for the asses to fall into, which should be about a foot deep, and as wide as the bottom of the furnace: this should also have an iron door to thut as close as possible; but just over the ash-hole, a the bars which support the fuel, should be a square hole about four inches wide to let the air in to make the fire burn : this must also have an iron frame, and a door to shut close when the fire is persectly lighted, which will make the fuel last the longer, and the heat will be more moderate, had at a manage

The top of this furnace should be nearly equal to the top of the bark-bed, that the lowest five may be above the fire; so that there may be a greater draught for the smoke; and the furnace should be covered with a large iron plate, closely cemented to the brickwork, to prevent the moke from getting out; or it may be arched over with bricks; but you should be very careful, wherever the fire is placed, that it be not too near the bark-bed; for the heat of the fire will, by its long continuance, dry the bark, fo that it will lofe its virtue, and be in danger of taking five; to prevent which, it will be the best method to continue an hollow between the brick-work of the fire and that of the pit, about eight inches wide; which will effectually prevent any damage arising from the heat of the fire; and there should be no woodwork placed any where near the flues, or the fire place, because the continual heat of the stove may in time dry it fo much, as to caufeit to take fire; which ought to be very carefully guarded againft.nough be

The entrance into this flove should be either from a green-house, the dry slove, or else through the shed where the fire is made, because in cold weather, the front-glasses must not be

The other fort of flove, which is commonly called the dry flove, as was before faid, may be either built with upright and floping glaffes at the top, in the fame manner, and after the fame model of the bark-flove; or elfe the front glaffes, which should run from the floor to the ceiling, may be laid floping, to an angle of forty-five degrees, the better to admit the rays of the fun in fpring and autumn: the by most persons who have built this fort of stoves; but it is a better method to have it built after the model of the bark stove, with upright glaffes in front, and floping glaffes over them, because this will more easily admit the fun at all the different feafons; for in summer, when the sun is high, the top glaffes will admit the rays to fhine almost all over the house; and in winter, when the fun is low, the

front

front glaffes will admis its rays; whereas, when the glaffes are laid to any declivity in one direction, the rays of the fun will not fall directly thereon above a fortnight in autumn, and about the fame time in fpring; and, during the other parts of the year, they will fall obliquely thereon; and in fummer, when the fun is high, the rays will not reach above five or fix feet from the

Befides, the plants placed towards the back part of the house will not thrive in the summer season for want of air; whereas, when there are floping glaffes at the top, which run within four feet of the back of the house; these, by being drawn down in hot weather, will let in perpendicular air to all the plants; and, of how much fervice this is to all fort of plants, every one who has had opportunity of observing the growth of plants in a stove, will easily judge; for when plants are placed under cover of a ceiting, they always turn themselves to-wards the air and light, and thereby grow crooked; and if, in order to preferve them strait, they are turned every week, they will nevertheless grow weak, and look pale and fickly, like a person that up in a dungeon; for which reasons, whoever has made trial of both forts of Itoves, will recommend the model of the bark-stove for every purpose, Miller's Gardener's Dictionar STOVER. Fodder for cattle.

STOUND, A wooden veffel to put fmall been inches quest of thelig the

STOWK. The handle of a pail;

alfo a shock of twelve sheaves.

STOWRE. A round of a ladder; a hedge-ftake; also the ftaves in the fides of a waggon, in which the everings are fastened.

STRAIN, or STRAIN, A violent extension of the finews or tendons of fome muscle, whereby the tendinous fibres are over-stretched, and sometimes ruptured or broken.

As foon as a Horfe is strained, we advise to turn the horse to grass immediately, external applications will then not be wanted, and if this be not done, applications will be of little or no ufe. Perhaps as good an embrocation as can be used is sour ounces of good Vinegar be used is sour ounces of good Vinegar sequence, particularly when the fruit and two ounces of Camphorated Spisses, as then they require most, and rit of Wine, with which the part may the weeds are also at that season most be bathed twice a day.

STRANGLES. A diftemper to which colts and young horfes are very fubject; it begins with a fwelling between the jaw-bones, which form times extend to the mufcles of the tongue; and is attended with forgr heat, pain, and inflammation, at fometimes till matter is formed, t horfe fwallows with the utmost dificulty;

Keep your horse tolerably warm, give him doses of nitre and sulphut twice a day, with meshes of brand and water barely warm,

STRANGURY. A difeafe in Cattle to be cured by giving decoctions of Marshmallow roots, in which a little Nitre and Gum Arabic is diffolyed keeping the body open with elysters.
STRAW the falk of Corn.

STRAWBERRY [Fragaria:] The distinct species are, 1. the Wood-Strawberry ; 2. the Virginian or scarlet Strawberry 3. the Hauthoy ; 4. th varieties,

An ingenious writer in the Muse Rusticum has obliged the world with ftrawberries.

" I have them, fays he, of feve kinds; and the fruit, in the feafon, is in great perfection, being large, and possessing a fine flavour. These I pro-cure with no great trouble or difficulty in the cultivation.

"I plant them in regular rows beds three feet wide, The foil I ch for them is a good, natural, fresh rich loam: the less it requires of manure the better, the fruit being the sweeter and finer.

46 On each of these beds above mentioned, I plant three rows of plants, in quincunx order, at fiftee inches diltance every way; and I rathe chufe to plant them each on a little hillock, as it were, fomething in imitation of hops.

"Between the beds are intervals of the fame width,

" My next care is, by frequent hoe ing, to keep my plants as clear from weeds as possible, by which they are fure to be supplied with plenty of nourishment; a matter of great conlexuriant: I therefore then fir the earth with the hoe often, which answers

1 have faid before, a double purpofe. clear as possible from runners; by which means my fruit is larger, and fooner ripe than it would otherwise

When my ftrawberry plants have borne fruit two fuccessive years on the beds, I get the alleys, or intervals, dug up and prepared, into which I trans-plant them in the fame manner they were planted in the first-mentioned ds, which then become in their turn the intervals.

"Here they remain two years more, when I again remove them into fresh land prepared for the purpose, in this manner never letting them bear fruit more than two years in one spot.

"I cannot eafily describe to you the great benefit this method of management is of to the plants, which are thereby greatly invigorated, and the fruit prodigiously improved, both in point of fize and flavour, infomuch hat they appear to be quite of a difbours, who first furnished me with the plants,"

STRAWBERRY BUTTE. See Blite. STRAWBERRY SPINACE. See Blite STRAWBERRY TREE, Arbutus.]
The species are, a Strawburry-tree with smooth fawed leaves, berries ha-This fort grows naturally in Italy, Spain, and also in Ireland, and is now very common in the English gardens. It produces the following varieties, viz. one with an oblong flower and oval fruit; another with a double flower; and a third with red flowers,

2. Strawberry tree with fmooth en eire leaves, berries full of feeds, and an erect woody ftem. This kind grows in the east, particularly about Magnesia, where it is so plenty, as to be the principal fuel used by the inhabitants of the country. This grows to a middle--62ed tree; the branches are irregular, and are garnished with large oval leaves. but not quite fo long; thefe are fmooth and entire, having no ferratures on their edges; the flowers are fhaped like those of the common Arbutus, but grow thinly on the branches. The well known; being at prefent in most

fruit is oval, and of the fame colour and confidence with the common fort, but the feeds of this are flat, whereas those of the common fort are pointed and angular

3. Arbutus with trailing falks, oval leaves, formewhat indented, flowers growing loofely, and many feeds. This fort grows naturally in Acadia, and other northern parts of America, upon fwampy land, which is frequently overflowed with water; this is a low, bushey shrub, with slender trailing branches, which are garnished with oval leaves, a little fawed on their edges; the flowers come out from the wings of the leaves, growing in thin loofe bunches. The fruit of this fort is never produced in England, and it is with great difficulty the plants are kept alive here.

4. Arbutus with trailing flalks and rough fawed leaves. This grows naturally on the Alps and the Helvetian mountains. It never rifes high, but fends out from the root many flender branches, which trail upon the ground, garnished with oblong rough leaves, of a pale green colour; the slowers are produced from the wings of the leaves, upon long flender foot-flalks, and are fucceeded by berries abou the fize of the common black Cherry, which are first green, afterwards red, and when ripe are black. Thefe are of a pleafant tafte, fo are frequently eaten by the inhabitants of those countries where they grow naturally. This is a very difficult plant to keep alive in gardens, for it is an inhabitant of bogs, growing among moss. Where the ground is never dry.

5. Arbutus with trailing ftalks and entire leaves. This grows maturally upon the mountains in Spain, and in most of the northern parts of Europe. The branches trail on the ground, which are closely garnified with fmooth thick leaves of an oval form, placed alternately; the flowers are produced in small bunches towards the extremity of the branches, which are fhaped like those of the common fort, but fmailer; and are fucceeded by berries, of the same size with those of the former fort, which are red when

The common Strawberry tree is

of the English gardens, and one of their greatest ornaments in the months of October and November, that being the feafon when the trees are in flower, and the fruit of the former year is ripe, for the fruit is a whole year growing to perfection; so that the fruit which is produced from the flowers of one year do not ripen till the bloffoms f the fucceeding year are fully blown; when there is plenty of fruit and flowers upon the trees they make a fine appearance, and at a feafon when most other trees are past their beauty.

Those trees which have large oval fruit make the greatest figure, their flowers being larger, and oblong. The fort with double flowers is a curiofity; but as the flowers have only two orders of leaves, so they make no great appearance; nor do the trees produce fruit in any plenty, therefore the other is preferable. The fort with red flowers makes a protty variety, when intermixed with the other; for the outsides of them are of a fine red colour at their first appearance, and afterwards they change to purple before they fall off. The fruit of this is the fame with the common fort. All thefe varieties are preferved by inarching or grafting them upon the common Ar-butus, for the feeds of either do not produce the same kind; though from the feeds of the oval fruit, there are generally many more of the fame produced than from the feeds of the common fort.

The best method to propagate the Arbutus is from feeds; therefore when the fruit is perfectly ripe, it should be gathered and mixed with dry fand, to preserve is till the time for fowing; the furest method of raising the plants is to fow the feeds in pots, which should be plunged into an old bed of tanner's bark, which has lost its heat, covering the bed with glasses, &c. to keep out the frost; this should be done in December; if the feeds are good, and as the fpring advances the pots are refreshed with water, the p will come up the beginning of April, when they should be frequently but fparingly watered, and constantly kept clean from weeds,

As the fummer advances, if the plants are shaded in the heat of the day, it will greatly promote their growth; but in warm weather they must be open all night to receive the dew, so should only be covered in the middle of the day: with this management the plants will rife to the height

of five or fix inches the first summer.

STRICKLE. The whet-stone placed upon the extremity of the shast of a scythe.

STRIKE. A bushel, or four pecks of corn

STRINGHALT. A difease in horfnatching up of the hinder leg much

higher than the other. STUBBLE. The fialks of corn left

in the field by the reaper.

STUM. The unfermented juice of the grape, after it has been fevera times racked off, and separated from its fe-

STUMP. The part of any folid body, particularly of trees, &c. remaining after the reft are taken away.

STUMPY. Full of flumps; hard,

STURK. A young bullock.

STY. A cabbin or fmall building to keep hogs in.

SUCCORY. See ENDIVE.

GUM SUCCORY. See Gum Suc-

SACCHARUM. The fugar cane. This plant grows naturally in the West-Indies, Arabia, &c. where its juice is boiled, and made into fugar.

SUGAR MAPLE. See MAPLE. SUCKER. A young twig, or funot

from the root.

SUFFOLK GRASS. The fame with meadow-grafs, or poa.

SUILLAGE. A drain of filth.

SULL A plough,

SULL-PADDLE. A plaugh paddle. SULPHURWORT. Hogs fennel. SULTAN FLOWER, } A spe centaury, which may be propagated by fowing the feeds, on a hot-bed in

the fpring, and then managing them as other annuals, not very hardy.

SUMACH, [Rhus.] This tree; or
fhrub, is cultivated in forme places on

account of the culinary uses of its fruits, and for the purposes of the dyers, &c. among us, it is met with only in the gardens of the curious. Th feeds or berries are of a red colour, in shape round and flat, Both these and the leaves are moderately aftringent, and have fomerimes been exhibited in this intention, but are now become

frangers to the shops. There are several species, no less than 15, reckoned by Miller, which are kept in the gardens for variety or ornament; some of which, natives of Africa, are too tender to bear the open air of the winters in England. They are all propagated by cuttings or layers.

SUMMER. The feafon in which the fun arrives at the northern folftice, and the days are at the greatest length.

SUMMER, also implies the large piece of timber, or principal beam, of a floor.

To SUMMER-LAND, or To Sum-MER-STIR. To fallow land in the fommer.

SUNDEW. See Ros Solis.

SUN-FLOWER. The name of a rell-known flower, much cultivated

in large gardens.

The fun-flower is an annual plant, and the feeds should be sown every fpring in a bed of good light earth. When the shoots are about three inches they should be transplanted into nurfery beds, and fet at eight inches diftance every way; they should remain there till they are a foot high, and then be carefully taken up with a ball of earth at their roots, and planted in large borders, or intermixed with flowering thrubs, and other large plants; they must be frequently watered till they have taken root, after which they require no other care. The flowers pear in July, and stand a considerable time : the largest of them should be preferved for feed. The birds are very fond of the feed of the fun-flower, and must therefore be carefully guarded from them, and the head left on the plant till October, at which time it should be cut off, and hung up to dry in an airy place, and in a month more the feeds will be perfectly hardened.

Dwarf Sun-Flowen, [Rudbeckia.] This is a native of North-America, but will bear sometimes in the open air of our English climate; there are feveral species, which are propagated by

parting the roots.

SUN-SCORCHED. A term ufed in some parts of England to express a distemperature of fruit-trees, owing to the fun's affecting them too forcibly on a fudden; the confequence of which

is the lofs and withering of the fruit, Such trees only are subject to this, as are planted in places sheltered from the spring fun, and open to that of the fummer; and may be always cured by proper waterings.

SUNSPURGE. Euphorbium.

SURBATING. A term used by farriers to fignify the fole of a horse's foot being worn, bruifed, or spoiled by beating the hoof against the ground in travelling without thoes, or going in hot fandy lands, or with a shoe that hurts the fole, or the like. It also fometimes happens by over riding a horse while young, before his feet are fufficiently hardened, or even by the hardness of the ground, and high lift-ing of his feet. The figns of this defect are his halting on both fore legs, going stiffly, and creeping as if foundered.

There is nothing better for furbated feet than tar melted into the foot, or vinegar boiled with foot to a proper confitence and poured into the foot boiling hot, with hurds over it, and fplints to keep it in.

SURFEIT. A difease incident to

horses and other cattle.

Surfeits arise from various causes; but are commonly the effects of some diseases not attended to, or that have

been ill cured.

A horse is said to be surfeited, when his coat stares, and looks rusty and dirty, though proper means have not been wanting to keep him clean. The fkin is full of fcales and dander, that lays thick and mealy among the hair, and is confiantly supplied with a fresh fuccession of the same, for want of due transpiration. Some horses have hurdles of various fizes like peafe or tares ; fome have dry fixed scabs all over their limbs and bodies; others a moisture attended with heat and inflammation; the humours being fo fharp, and violently itching, that the horfes rub fo inceffantly, as to make themselves raw. Some have no eruptions at all, but an unwholfome look, and are dull, fluggish, and lazy: some appear only lean and hide-bound: others have flying pains and lamenefs, resembling a rheumatism: fo that in the furfeits of horses, we have almost all the different species of the scurvy, all the different special diffempers.

The

The following method is usually attended with fuccess in the dry species. First take away about three or four pounds of blood; and then give the following mild purge, which will work as an alterative, and should be repeated once a week or ten days for fome time.

Take Succotrine aloes fix drams, or one ounce; gum guaiacum half an ounce; diaphoretic antimony, and powder of myrrh, of each two drams: make into a ball with fyrup of buckthorn,

In the intermediate days, an ounce of the following powder should be given morning and evening in his feeds.

Take native cinnabar, or cinnabar of antimony, finely powdered, half a pound; crude antimony, in fine powder, four ounces; gum guaiacum, alfo in powder, four ounces: make into fixteen doses for eight days.

This medicine must be repeated till the horse coats well, and all the symptoms of furfeit disappear. If the horse is of small value, two or three com-mon purges should be given, and half an ounce of antimony, with the same quantity of fulphur, twice a day, or the alterative balls with camphor and nitre,

If the little scabs on the skin do not peel off, anoint them with the mercurial ointment; during the time of using which, it will be proper to keep the horse dry, and to give him warm water. This ointment properly rub-bed into the blood, with the affishance of purging physick, has frequently cured these kinds of furseits, without

any other affistance.

The wet furseit, which is no more than a moift running scurvy, appears on different parts of the body of a horse, attended fometimes with great heat and inflammation; the neck oftentimes fwells fo in one night's time, that great quantities of a hot briny humour iffue forth, which, if not allayed, will be apt to collect on the poll or withers, and produce the poll-evil or fiftula. This difease also freevil or fiftula. quently attacks the limbs, where it proves obstinate, and hard to cure: and in some horses shews itself spring and fall.

In this case bleed plentifully, avoid Vol. II.

externally all repellers, and give cooling physic twice a week; as, four ounces of lenitive electuary, with the fame quantity of cream of tartar; or the latter, with four ounces of Glauber falts, quickened, if thought pro-per, with two or three drams of powder of jalap, diffolved in water-gruel, and given in a morning fasting.

After three or four of thefe purges two ounces of nitre made into a ball with honey may be given every morning for a fortnight; and if attended with success, repeated for a fortnight

The powders above mentioned may also begiven with the horse's corn; or a firong decoction of guaicum fha-vings, or logwood, may be given alone to the quantity of two quarts a day. These, and indeed all alterative medicines, must be continued for a long time, where the diforder proves ob-

The diet should be cool and opening, as scalded bran or barley; and if the horse is hide-bound, an ounce of senu-greek seeds should be given in his seeds for a month or longer; and as this disorder often proceeds from worms, give the mercurial physic too, and afterwards the cinnabar powders, as above directed; but as in general it is not an original difease, but a symptom only of many, in the cure, regard must be had to the first cause: thus, as it is an attendant on furfeits, fevers, worms, &c. the removal of this com-plaint must be variously effected.

In a mangy horse the skin is generally tawny, thick, and full of wrinkles, especially about the mane, the loins and tail, and the little hair that remains in those parts stands almost always strait out or bristly :, the ears are commonly naked and without hair, the eye and eye-brows the fame; and when it affects the limbs, it gives them the fame afpect; yet the fkin is nor raw, nor peels off, as in the hot inflamed furfeit,

Where this distemper is caught by infection, if taken in time it is very eafily cured; and we would recommend a sulphur ointment as most effectual for that purpose, rubbed in every day. To purify and cleanse the blood, give antimony and sulphur for some weeks after. There are a great

some weeks after, variety. Uu

variety of external remedies for this powder, tobacco fleeped in chamber-Solleyfell recommends the e. &c. following:

Take burnt allum and borax in fine powder, of each two ounces; white vitriol and verdigrease powdered, of each four ounces; put them into a clean pot, with two pounds of honey, flirring till they are incorporated; when cold, add two ounces of strong aqua-

But when this diforder is contracted by low feeding, and poverty of blood, the diet must be mended, and the the diet must be mended, and the horse properly indulged with hay and corn. The following ointments are effectually used for this diforder, rubbed into the parts affected every day:

Take powdered brimstone, train oil, and tar, of each equal quan-

tities; to which may be added ginger, or white hellebore. Or, Take fulphur vivum, half a pound, crude fal ammoniac one ounce; hogs lard, or oil, a sufficient quantity to form into an ointment.

Or this :

Take quickfilver, and oil of vitriol, of each one ounce; hogs lard, one pound, fulphur vivum four ounces, oil of turpentine one ounce and half.

These are both very powerful re-medies for this disorder, and can scarce fail of fuccefs,

To the two first, occasionally, may be added a third part of mercurial oint-ment; but as sulphur is in general allowed to be the specific in the itch, and being found both more fafe and efficacious than mercury; fo we apprehend it will fufficiently answer the purpose here; for as this disorder feems best accounted for by Leuwenhock, from certain small infects he difcovered in the puffules by the microfcope; so it feems as if they were de-stroyed by the steams of brimstone, though only raised by the heat of the body; for in the human body, the itch may be cured by partial fulphu-reous unctions on the legs only; but where the mange proves obstinate in horses, let the parts be washed with fublimate water before the application of the ointment, and subjoin the internal use of sulphur, in order to diffuse the steams more certainly through the skin; there being reason to believe, as in the itch, that the animalculæ may fometimes lie too deep to be thoroughly destroyed by external applica-

SUGAR. The effential falt of the arundo saccharifera, a beautiful large cane growing spontaneously in the East-Indies, and fome of the warmer parts of the West, and cultivated in great quantity in our American plantations. The expressed juice of the cane is clarified with the addition of lime water (without which it does not assume the form of a true sugar) and boiled down to a due confistence; when, being removed from the fire, the faccharine part concretes from the groffer uncluous matter, called treacle, or melaffes. This, as yet impure or brown fugar, is farther purified, in conical moulds, by fpreading moist clay on the upper broad furface: the watery moisture, slowly percolating through the mass, carries with it a con-siderable part of the remains of the treacly matter. This clayed sugar, treacly matter. This clayed fugar, imported from America, is by our re-finers diffolved in water, the folution clarified by boiling with whites of eggs and despumation, and after due evaporation poured into moulds, as foon as the fugar has concreted, and the fluid part drained off, the furface is covered with moift clay as before. The fugar, thus once refined, by a repetition of the process, becomes the double-refined sugar of the shops. The candy, or crystals, are prepared by boiling down solutions of sugar to a certain pitch, and then removing them into a hot room, with flicks fet acrofs the vessel for the sugar to shoot upon a these crystals prove of a white or brown colour, according as the fugar was pure or impure.

The uses of sugar as a sweet, are sufficiently well known. The impure forts contain an unctuous, or oily matter, in confequence of which they prove emollient and laxative. The cryftals are most difficult of solution, and hence are properest where this fost lubrica-

in the mouth.

SURVEYING. The art or act of measuring of lands; that is, of taking

the dimensions of any field, parcel, or tract of land, laying down the same in a map or draught, and finding the area or content thereof.

SWALLOW WORT, [Vincetoxicum]

Tame poifon.
SWAMP. A hollow, watery place, in any part of a field; a bog. See Bog. SWANG. A fresh piece of green

fward lying in a bottom among arable or barren land,

SWARD. The furface of the

ground. SWARM. A large number of bees, feeking a proper fettlement. See BEE. SWATH, or Swarth. A line of grass, &c. cut down by the mower. SWATH-BUCK. A swarth, or

line of new-mown grafs or corn.

SWATH-RAKE, A rake about two yards long, with iron teeth, and a bearer in the middle, to which a man fixes himfelf with a belt; and when he has gathered as much as his rake will hold, he raifes it and begins again. This instrument is in some counties called a dow-rake, and much used in Essex for gathering barley after mowing.

SWEET APPLE. See Cuftard Apple. SWEET PEA. See Everlafting Pea. SWEET JOHN, SM CARNA-

SWEET WILLOW. Candleberry-

SWEAL. To finge, or burn off

SWILL. A veffel to wash in, stand-

ing on three feet,

SWINE. See Hoo.
SWINE-CRUE. A hog's-fty. SWINHULL A hog's-fty. SWINE'S CRESS. Scurvy-grafs,

SYCAMORE, or Wild Fig-Tree, falfely to called, is our acer majus, or broad-leaved Mas, one of the maples, and is much more in reputation for its shade than it deserves; for the honey-dew leaves, which fall early, like those of the ash, turn to mucilage and noxious infects, and putrefy with the first moisture of the season, so as they contaminate and marr our walks; and are therefore, by my confent, to be banished from all curious gardens and avenues. It is raifed of the keys in the hufk, as foon as ripe, and they come up the first spring; also by roots and layers, in ground moift, not over wet or fliff, and must be governed as other nurfery plants. There is in Germany a better fort of fycamore than ours (nor are ours indigenous) where-with they make faddle-trees, and divers other things of ufe. Our own is excellent for trenchers, care and plowtimber, being light, tough, and not much inferior to ash itself; and if the trees be very tall and handsome, they are the more tolerable for diftant walks, especially where other better trees profper not fo well, or where a fudden fhade is expected: Some commend them to thicken copfes, especially in parks, as least apt to the spoil of deer, and that it is good fire-wood. This tree being wounded, bleeds a great part of the year; the liquor emulating that of the birch. The fap is fweet and wholesome, and in a short time yields fufficient quantity to brew with, so as with one bushel of malt is made as good ale as four bushels with ordinary water, upon Dr. Tongue's experience. SWINE-HERD, A keeper of fwine, Phil. Trans. vol. iv. fol. 917 .- Evilyn. SYRINGA. Lilac.

SYTHE. See SCYTHE.

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. days where from the bland on the the Land Suddivides on the contract of the color the residence of the fertile in that so be with an energing the interest of the party of the residence of the price described wildly but her convergence to make all answer history the difference be to mention, numbers, recommendation of the formation of the formation of the observed properties and rectangues of the formation of the comment of the observed properties and the comment of the observed properties and the comment of the observed properties and the comment of the comment are registered by these out, the arranted where are not need to the all it is referred to Itali solina contribution by the amount sancole between the length continues. region to do a come dept. in the bring content in the date of the resting with the en especial a The China con the there agrees, a title content of the china the content of the The first increase of the being up to the being the second of the second of the being the second of the being the second of the being the second of the seco in categrable by a softweener finer The Charles and governor plane as a comto endoughing distinctions to below with classing and distinctions

SYCAMORE, to Folk Fighties,

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mail of lead to the tent tent of willer of called in open agent mailed

es of project of the testone fort of they contempled of Art authorities

ABERN, A cellar, TAGGE. A sheep of the first year.

TAIL SOAKED. A difeafe incident to cows, by which the joint of the tail near the rump, will, as it were, rot away. The cure is generally performed by cutting a deep gash into ful of falt into the wound, and binding it with a rag. Others mix foot and a clove of garlick with the falt.

TACAMAHACCA - TREE.

fpecies of the poplar,

TACAMAHACCA. A refin obtained from a tall tree, which grows spontaneously on the continent of America, and in a sheltered situation bears the winters of our own climate. Two forts of this refin are fumetimes to be met with. The best, called (from its being collected in a kind of gourdfhells) cacamahacca in shells, is somewhat unctuous and foftish, of a pale yellowish or greenish colour, an aromatic tafte, and a fragrant delightful fmell, approaching to that of lavender and ambergris. This fort is very rare: that commonly found in the shops is in semitransparent grains or glebes, of a whitish, yellowish, brownish, or greenish colour, of a less grateful fmell than the foregoing. The first is faid to exude from the fruit of the tree, the other from incisions made in the trunk. This refin is faid to be employed among the Indians, externally, for discussing and maturing tumours and abating pains and aches of the limbs: it is an ingredient in the anodyne, hysteric, cephalic, and stomachic plasters of the Edinburgh pharmacopæia. The fragrance of the finer fort sufficiently points out its being applicable to other purposes,

TALCK. Talcky earth is fearcely

MASSAT

in any particulation of a bogs, for flow SWANG A neth piggs of stiren and young months and among the con-

assure news t

the distantion of any field, percel, or

STRALLOW WORK, [Finemerissen]

fibrous or leafy texture; more or less pellucid, bright or glittering; smooth and uncluous to the touch; too flexible and elastic to be easily pulverized; fost, so as to be cut with a knife. In these respects some of the gypseous earths greatly resemble them, but the difference is readily discovered by fire; a weak heat reducing the gypfeous to powder, while the strongest makes no other alteration in the talcky, than fomewhat diminishing their flexibility,

brightness, and unctuosity.

TAMARIND. This tree grows naturally in both Indies, and also in Egypt; but it has been supposed by fome eminent botanifts, that the tamarind which grew in the East-Indies was different from that of the West because the pods of the first are almost double the length of those of the latter. The pods which have been brought from the East-Indies have generally been fo long as to contain five, fix, and fometimes feven feeds, whereas those of the West-Indies have very rarely more than four; but the plants raised from the feeds of both forts are fo like as not to be diffinguished.

This tree grows to a very large fize in those countries where it is a native, but in England it will not thrive out of a stove, especially in winter. The sem is very large, covered with a brown bark, and divides into many branches at the top, which spread wide every way, and are closely garnished with winged leaves, composed of fixteen or eighteen pair of lobes, without a fin-gle one at the end. The lobes are about half an inch long, and a fixth part of an inch broad, of a bright green, a little hairy, and fit close to the midrib. The flowers come out from the fide of the branches, five, fix, or more together upon the fame footalterable by a vehement fire. The stalk in loose bunches; these are commasses of this earth are generally of a posed of five reddish petals, one of which is reflexed upward like the standard in some of the butterfly flowers, two others stand on each fide like the wings, and the other two are turned downwards; these (in the countries where the plants grow naturally) are succeeded by thick compressed pods, two, three, four or five inches long, having a double skin or cover, and swell in every place where the seeds are lodged, full of an acid stringy pulp, which surrounds smooth, compressed, angular seeds.

The tamarinds which are brought from the East-Indies are darker and drier, but contain more pulp, being preferved without sugar, and are fitter to be put into medicines than those from the West-Indies, which are redder, have less pulp, and are preserved with sugar, so are pleasanter to the

palate.

The pulp of these fruits, taken in the quantity of two or three drams, or an ounce or more, proves gently laxative or purgative; and at the same time, by its acidity, quenches thirst, and allays immoderate heat. It increases the action of the purgative sweets, cassia and manna, and weakens that of the resinous cathartics. Some have supposed it capable of abating the virulence of antimonial preparations; but experience shews that it has a contrary effect, and that all vegetable acids augment their power. Tamarinds are an ingredient in the electuary of cassa, the lenitive electuary, and decoction of tamarinds with sena.

The plants are preferved in the gardens of those who have conveniency to maintain rare exotic-trees and shrubs.

They are easily propagated by sowing their seeds on a hot-bed in the spring; and when the plants are come up, they should be planted each into a separate small pot, silled with light rich earth, and plunged into a hot-bed of tanner's bark to bring them forward, observing to water and shade them until they have taken root; and as the earth in the pots appear dry, they must be watered from time to time, and should have air given to them in proportion to the warmth of the season, and the bed in which they are placed. When the pots in which they are planted are filled with their roots, the plants should be shifted into pots of a larger size, which must

be filled up with rich light earth, and again plunged into the hot-bed, giving them air as before, according to the warmth of the fealon. In very hot weather the glaffes should be shaded with mats in the bear of the day, otherwise the sun will be too violent for them through the glaffes, nor will the plants thrive if they are exposed to the open air, even in the warmest season; so that they must be constantly kept in the bark-stove both summer and winter, where if rightly managed, they will grow very saft.

they will grow very fast.

TAMARISK; [Tamarix.] There are two species of this tree; one with slowers having five stamina; the other whose showers have ten stamina. The first grows naturally in the south of France, in Spain and Italy, where it arrives to a tree of middling size; but in England is seldom more than four-teen or fixteen seet high. The other grows naturally in Germany, in most land: it is rather a strub than a tree, having several ligneous stalks arising from the same root, which grow erect, sending out many side-branches which

are also erect.

Both these forts cast their leaves in autumn, and it is pretty late in the spring before the young leaves push out, which renders them less valuable; they are now frequently planted in gardens for ornament, and when mixed with other shrubs, make a pretty va-

ricty.

The culture of both forts of tamarisk is very easy: every cutting
will grow that is set in winter, and
will be a good plant by the autumn
following. The cuttings should be of
the last fummer's shoot; and a most
part of the garden is most eligible for
them to be planted in. In two years
they will be good plants for the willdernels or shrubbery, and may then be
planted out in almost any foil, though
they best like a light most earth, especially the German fort; for in countries where it grows naturally, it is
generally found in low watery grounds

The bark and leaves of this tree are moderately aftringent; they are never met with in prescription, and have long been entire strangers to the shops.

TAME POISON, [Vinctionicum]
Swallow-wort, This is a native of
the warmer climates: it is fometimes

et with in our gardens, but rarely erfects its feeds. It is reckoned by botanists a species of apocynum, or dogfine; from all the poisonous forts of which it may be distinguished, by ielding a limpid juice, whilf that of the others is milky. The root has a frong smell, especially when fresh, approaching to that of valerian, or nard; the taste is at first sweetish and eromatic, but foon becomes bitterifh, fubacrid, and nauseous. This root is esteemed sudorific, diuretic, and emmenagogue, and is frequently employed by the French and German physicians s an alexipharmac, fometimes as a fuccedaneum to contrayerva, whence thas received the name of contrayerva Germanorum. Among us, it is very rarely made ufe of: it appears from its enfible qualities, to be a medicine of much the same kind with valerian,

which is indisputably preferable to it.

TAN. The bark of oak, chopped and ground by a tanning mill into a coarse powder, to be used in the tan-

ning or dreffing of fkins,

Tan is of great use in gardening: R, by its fermentation, when laid a body, which is always moderate d of long duration, which renders of great service to hot-beds : and econdly, after it is well rotted, it becomes excellent manure for all forts of cold fiff land; upon which one load f tan is better than two of rotten dung, nd will continue longer in the ground.

The use of tan tor hot-beds has not been many years known in England; the first hot-beds of this fort, which were made in England, were at Blackheath, in Kent, about fifty-five years ago: these were defigned for raising of orange-tees; but, the use of these hot-beds being but little known at that time, they were made but by two or three persons, who had learned the afe of them in Holland and Flanders, where the gardeners feldom make any other hot-beds, but in England there vere very few hot-beds made of Tanner's bark, before the ananas were introduced into this country, which was in 1719, fince which time the use of these hot-beds have been more general; and are now made in all those gardens where the ananas plants are cultivated, or where there are collections of tender exotic plants preferred.

TANSEY, [Tanacetum.] The name of a plant often cultivated in kitchengardens, and of which there are three varieties, that have all been produced accidentally from the feeds of the common tanfey. All the varieties are eafily propagated by the creeping roots, which, if allowed to remain undifturbed, will overspread the ground where they are permitted to grow; fo that wherever tansey is planted in a garden, the flips should be placed two feet afunder, and in particular beds, where the paths round them may be often dug, to keep their roots within bounds. They may be transplanted either in spring or autumn, and will thrive in almost any foil or fituation.

Confidered as a medicine, it is a mo derately warm bitter, accompanied with a strong, not very disagreeable flavour: fome have had a great opinion of it in hysteric disorders, particularly those proceeding from a deficiency, or suppression of the uterine purgations. The leaves and feeds have been of confiderable effeem as anthelmintics: the feeds are less bitter, and more acrid and aromatic, than those of rue, to which they are reckoned fimilar: or of fantonicum, for which they have been

frequently substituted.

Wild TANSEY, [Potentilla.] Cinque-

TARES, [Vicia.] Vetches. Tare is a low climbing or drooping plant, retembling the pea in its man ner of growth, but smaller. The stalks are weak, and lean on the ground. The leaves are each composed of feveral pairs of smaller, of a pale green colour, and there are tendrils for climbing or hanging upon any thing. The flower refembles that of the pea in shape, but is smaller, and of a mixed purple colour in the common kinds, tho' of various hues in others. The feeds are contained in flender pods, and are round and fmall, The colour varies like that of the flowers,

There are two kinds of Tares, the white and the black. These are named after the colour of the feeds, and have little other difference: they properly are only feminal varieties of the fame species; the white Tare rising originally from the feed of the black, as the common blue and red flowers of many kinds, in our gardens, will occaffonally yield such as are white. In the same manner the first variation in this kind of Tare is, that the flower is white, whereas it is purple in the other and the sceds afterwards are of the same colour. Either of these may be sown in fields, and they will answer the same purpose; but the common or black Tare is the hardier kind, and the best bearer.

There may be a great advantage in the fowing Tares properly, among the variety of articles with which the prefent practice of husbandry gives the farmer an opportunity of varying his crop. They excellently prepare the land for corn, and their produce is of a certain and not inconfiderable price, being the proper food of pigeons, and ufeful to many other purposes.

Wherever there are pigeons there must be Tares raised or bought; and this is not their only use, for the straw when when dried is an excellent food fot cattle. So that upon the whole, the Tare, though greatly inferior to many other articles, is a very profitable, and very useful crop at proper seasons; as a very poor land will support it, and it demands little preparation.

It is a hardy product, approaching to the nature of a weed; and it will therefore grow either on land naturally poor or fuch as is exhausted: this is what makes the farmer find his principal advantage in its culture: for it not only thus stands in the place of barrenness, but prepares the ground for better crops.

for better crops.

The most favourable land for Tares is a good sandy loom. They will succeed excellently on mellow earth, if not too moist for them, which is a very common inconvenience in that fort of ground, that is not rich in any respect; and we see great crops of them in the lime-stone countries, and that frequently where there is very little depth of soil.

The worst ground for the Tare is a tough wet clayey foil. In Hertford-shire, where a great quantity is raised, they find them always succeed better on the hilly grounds than in the

Though the field where they are to fland has been pretty well exhausted by the last crop of corn, no prepa-

ration by manure, or repeated fillage, is wanted: all that is needed in the plough in the flubble; and let this lie to rot; and in fpring to open the ground for the feeds these kind of creps are so far from demanding manure, that they serve as manure to the land themselves; and of them all none more than this species,

In his choice of the feed, the Hufbandman should not be negligent: a little care costs nothing, and it ensures a profitable crop. Let the feed Tares be bought or purchased by exchange from some farmer, at ten or twelve miles distance, and let the farmer who is to sow them take care to purchase such as have grown on a different kind of soil from his own.

Thus, if his field be mellow earth, let him chufe the feed Tares from a loamy or fandy foil; and on the contrary, if his be fandy, let him chufe the feeds from one that is not.

Those Tares are in general best for sowing that are of a middling size, round, full, and plump, of a smooth and bright surface, and heavy. There is reason the husbandman be careful in this choice, because few seeds are so apt to spoil; and all pains are thrown away upon land where there is a desertion the seed.

In fowing, five pecks are generally allowed to the acre, but a bushel is fully sufficient: three pecks will be very well. The best time for fowing them is in the middle of February. Very little trouble need be taken about them, for the most slight stirring of the ground is sufficient; but there must never be more sown in a day than can be well covered before evening; for if they lie exposed to the dews of the night, they contract a damp that decays a great part of them; and the rest grow poorly.

In general, a poorer is better than a more rich land for Tares. In the former they pod well; in the latter, they are to run into stalks and leaf with less bearing. There is also another miffortune attending the sowing of Tares on rich ground, especially if it be a little moist, which is, they are more apt to lie upon the ground, because of the weight of the stalk, and then they rot. There is an old custom among the farmers of Essex, and some

other counties, of fowing tares and a! When the tares are thus properly horfe-beans together; they thrive tol-erably well in this way, but they do better fingly. There is no difficulty attending the reaping of them, for they may be very well cut together, when ripe, as they will be about the fame time; and the different fizes of the bean and tare make them eafily fe-

parated in the barn by a riddle.

There are two feafons of cutting them, the one for the ftraw, as it is called; that is, for the green plant for the food of cattle, the other for feed. The first may be continued at differ-ent times for feveral weeks, and it is a very wholesome and profitable food; the other is only to be done at one time, that is, when the tares are ripe in the pods; and for the knowing the exact period for this, the tare is to be watched in the same manner as the pea.

The cutting them for fodder is often the most important service they can be put to; as to the letting them fland for ripening, it is for feed, or for food for pigeons; and they must be left to dry in the field in little heaps, before they are carried home for getting out the feed.

The farmer has feen how eafily. tares are damaged by wet, the confequence of which is, their growing mouldy, or musty: after this they never recover their right condition, look, or value: but, befide this, there is another accident to which they are very liable, that is, the being infected with worms, mites, and other little ver-min. Now in this cafe the pulpy part is eaten, and they become light, dufty, imperfect, and of little value.

The preservation of tares from both thefe accidents depends principally on the drying of them; for, as it is damp that moulds them, the fame makes way for those little mischievous vermin, which are always found in damp tares, but rarely in fuch as have

been properly dried.

If the air be very warm and dry, the fpreading and turning them on a floor for some days will answer the purpole; if otherwise, they should be laid upon a kiln: but, in this case, the hear must be very gentle, and well mo-derated, otherwise it may do more harm than the damp, deftroying the vegetative power in the feed, and injuring it in its nourishing quality.

ordered, they must be kept in a dry place, and properly fecured from ver min. The thorough drying is very effential, for otherwise they will breed diforders in the pigeons that are fed with them; and, when used as feed, not one in ten will grow.

When they are to be kept any long time, the best way is to put them up in large barrels; then fetting them in a dry, cool place, they will be out of all danger whatfoever, and keep good for

all purpoles for many years. TAR., A thick, black, unctuous substance; obtained from old pines and fir-trees, by burning them with a close smothering heat. It differs from the native refinous juice of the trees in having received a difagreeable impreffion from the fire, and containing a portion of the faline and other juices united with the refinous and oily; by the mediation of thefe, a part of the terebinthinate oil proves dissoluble in aqueous liquors, which extract little or nothing from the purer turpentines. Water impregnated with the more foluble parts of tar proves, in confequence of this hot pungent oil, warm and flimulating: it fenfibly railes the pulse, and quickens the circulation: by these qualities, in cold languid phlegmatic habits, it strengthens the folids, attenuates viscid juices, opens obstruc-tions of the minuter vessels, and promotes perspiration and the fluid fecretions in general; whilft in hot bilious temperaments, it disposes to inflammation, and aggravates the complaints which it has been employed to remove.

TAR PILLS, Take any quantity of tar, and mix with it as much powdered elecampane root as will reduce it to a proper thickness for being form-

ed into pills.

The powder here mixed with the tar, though of no great virtue, is nevertheless a very useful addition, not only for procuring it a due confiftence for taking, but likewise as it divides the refinous texture of the tar, and thus contributes to promote its folution by the animal juices. In the Edinburgh infirmary, half a drachm of the mals, made into middle-fized pills, is given every morning and evening, in disorders of the breast, scurvies, &c.

TAR WATER. Take of tar, two pounds; water, one gallon. Stir them firongly together with a wooden rod; and after flanding to fettle for two days, pour off the water for die.

Tar water has lately been recommended to the world as a certain and fafe medicine in almost all diseases; a flow yet effectual alterative in cachexies; survives, chlorotic, hysterical, hypochandriacal, and other chronical complaints; and a sudden remedy in acute diffempers which demand immediate relief, as pleurifles, peripneumonies, the small-pox, and all kinds of severs in general. The medicine, though certainly far infectior to the character that has been given of it, is doubtles in many cases of considerable utility: it sensibly raises the pulse, and occasions some considerable evacuation, generally by per spiration or urine, though sometimes by stool or vomit: hence it is supposed to act by increasing the vis vitz, and enabling nature to expel the morbisc humours.

We shall here insert, from the first public recommender of this siquor (Bilhop Berkeley) some observations on the manner of using it:—

Tar water, when right, is not paler than French, nor deeper-coloured than Spanish white-wine, and full as clear; if there be not a spirit very sensibly perceived in drinking, you may conclude the tar water is not good. It may be drank either cold or warm: In cholics, I take it to be best warm. As to the quantity, in common chronical indispositions, a pint a day may income indispositions, a pint a day may Tar water has lately been recom-mended to the world as a certain and fafe medicine in almost all diseases; a

It may be drank either cold or warm: In cholics, I take it to be best warm. As to the quantity, in common chronical indispositions, a pint a day may suffice, taken on an empty stomach, at two or four times, to wit, night and morning, and about two hours after dinner and breakfast; more may be taken by strong stomachs. But shose who labour under great and inveterate maladies, must drink a greater quantity, at least a quart every twenty-four hours; all of this class must have much patience and perseverance in the use of this, as well as of all other medicines, which, though sure, must yet in the nature of things be slow in the cure of inveterate chronical disorders. In accute cases, severs of all kinds, it must be drank in-bed, warm, and in great quantity (the sever still enabling the patient to drink) perhaps a pint every Vol. II,

hour, which I have known to work furprising cures. But it works to quick, and gives fuch spirits, that the patients often think themselves cured before the sever hath quite left them."

TARRAGON. The name of a spicy plant, often cultivated in kitchen gardens.

fpicy plant, often cultivated in kitchen gardens.

It is propagated by feeds, flips, or cuttings. March or April is the proper time for fetting them, and they may be transplanted again in the fummer. The plants should stand at least a foot alunder every way, and they should be kept clean from weeds. They will endure great cold; and even extraordinary drought will not hurt them, if they are but a little watered, or if the earth about them is kept loofe and wall filtred. A very few of their leaves mixed with a fallad, particularly of fettuces, give it a high aromatic flavour. The tenderest and freshest are the best for this purpose.

TARTAR, [Tartarus.] Tattar is a falline substance, thrown off from wines, after fermentation, to the fides and octtom of the cask: it proves of a red or white colour, and more or less red or white colour, and more or less than the deast.

wines, after fermentation, to the fide and bottom of the cask: it proves of red or white colour, and more or lef foul or droffly, according to the colour and quality of the wine; the white is generally looked upon as the pureff of either fort, such as is clean, folial formewhat transparent, and has its out. Indee covered over with small thining chrystals, is preferable to such as appears porous, droffly, opake, and less bright. This substance, though truly faline, is scarce acted upon by cold water; the pureft fort, or such as has been faline, is scarce acted upon by cold water; the purast fort, or such as has been pusified by art, requires twenty four times its weight of boiling water to dissolve in: the folutions of both the tartars pass the filter colourles, and shoot, in the cold, into small, whise, semitransparent chrystals. All such earths as are soluble in vinegar, and alkaline salts, render tartar more easily soluble in water; hence the refiners at Montpellier are said to employ a certain earth for promoting its solutions with some particular managements for making it shoot into large chrystals. This addition may occasion a considerable alteration in the salt, insomuch that the finer forts of white tartar are perhaps preferable on many occasions perhaps preferable on many occasions to the common chrystals. The virtues of tartar are those of a mild,

cooling, aperient, laxative medicine. Taken from half an ounce to an ounce, it proves a gentle, though an effectual

TEA, [Thea.] The leaves of a

thrub cultivated in China.

The feveral forts of tea met with among us, are the leaves of the fame plant, collected at different times, and cured in a fomewhat different manner: the small young leaves very carefully dried, are the finer green: the older afford the ordinary green and bohea. The two first have a sensible flavour of violets; the other of roses the former is the natural odour of the plant; the latters as Neumann obthe former is the natural odour of the plant; the latter, as Neumann oblerves, is probably introduced by art.
Some of the dealers in this commodity
in Europe, are not ignorant that bohea
tea is imitable by the leaves of certain
common plants, artificially tinetured
and impregnated with the role flavour.
The tafte of both forts is lightly bitterift, subastringent, and somewhat aromatic. The medical virtues attributed
to these leaves are sufficiently numerous, though few of them have any just
foundation: little more can be experfect from the common infusions,
than that of a diluent, acceptable to the petter from the common infutions, than that of a diluent, acceptable to the Romach: the diuretic, diaphoretic, and other virtues which they have been celebrated for, depend more on the quantity of warm fluid, than any particular qualities which it gains from the tea. Nothing arises in diffillation from either fort of tea with rectified spirit; water elevates the whole of their fla-

vour.

South-Sea Tra. Cassioberry.

TEAZLE, [Dipfacus.] The Fuller's

Teazle is the only kind cultivated for
use. Teazle is not one of those universal commodities for which there is every where a market. It may be raifed in any place, and it is of cumbersome carriage; therefore he must be very imprudent, who fets about to cultivate in prudent, who lets about to cultivate it at a diffance from the parts of the kingdom where it is used, because nothing need prevent those from doing it who are upon the spot; but to such as are, it proves on many occasions a very profitable growth.

The teazle is propagated by fowing the seeds in March, upon a dry foil. About one peck of the seed will sow an access for the plants should have proper

acre, for the plants should have room to grow; otherwise the heads will no

be fo large, nor in fo great quantity. When the plants are come up, you must hoe them in the same manner as is practifed for turners, cutting down all the weeds, and fingling out the plants to about fix or eight inches diffance; and as the plants advance, and the weeds grow again, you must hoe them a fecond time, cutting out the plants to a wider distance; for they should be at last left a foot asunder; and you should be particularly careful to clear them from weeds, especially the first should be particularly careful to clear them from weeds, especially the first summer; for when the plants have spread so as to cover the surface of the ground, the weeds will not so readily grow between them. The lecond year after sowing, the plants will shoot up heads, which will he fit to cut about the beginning of August; at which time they should be cut and tied up in bunches, setting them in the sun, if the weather be fair; but if not, they must be set in rooms to dry. The common produce is about 160 bundles or staves upon an acre, and they will sell for upon an acre, and they will fell for about one shilling a stave.

TEAM. A number of hories or oxen drawing at once.

To TEAM. To pour or lade out of one veffel into another. TO TEAM.

To TED. To spread abroad new-mown grass, which is the first thing done in order to its being dried, and made into hay,

TEDDER or TETHER. A rope with which a horse is tied in the field,

that he may not pasture too wide.
To TEEM. To be pregnant; to

engender young.
TENDRIL. The clasper of a vine,
or other climbing plant.

TENEMENT. Any thing held by a tenant, as a house, &c.
TENURE. The manner in which tenants hold their lands, &c. of their

THATCH. Straw laid on the top of a building, rick, &c. to keep out the

weather.
THEAVE. An ewe of the first year.
THETCHES. See VETCHES.
THICKET. A close knot or tuft

of trees; a close wood. THILL-HORSE. The last horse in

a team; the horse that goes between the thills or shafts.

THISTLE, [Carduus.] A prickly weed, growing among corn, &c. The

The following observations on thistles is felected from the papers of the Bath Agriculture Society:—

4. Some observations on Thistles as injurious in agriculture, more particularly the Seratula Arvensis of Linnaeus, By William Curtis, Author of the Flora Londinensis:

Gentlemen,

"While fome of your correspondents are laudably engaged in enriching agriculture, by discovering and promoting the cultivation of new plants, permit one whom you have been pleased to elect an honorary member of your Society, to lay before you a few observations on some of the plants which are more particularly noxious to the far-mer. Should they be confidered as contributing to advance even in the fmallest degree the defign of your institution, he may be again excited to trouble you on other subjects, as infor-mation may arise from a cultivation of most of the British plants on a small

scale.

"There are no plants over which the economical farmer ought to keep a more watchful eye than the thiftle tribe. He is sensible that they are not only useles, as resisting the bite of most animals, the hardy as excepted, but that they occupy much ground; and being furnished with downy seeds, are capable of being multiplied to almost any distance. Hence in many parts of the kingdom, the farmers whose lands are contiguous unite in preventing the increase, by cutting them down before are contiguous unite in preventing the increase, by cutting them down before they seed; but this operation, though destructive to some species, will only palliate the bad effects of others.

"To be acquainted with the qualities of each kind, we must observe them

with much attention, and view them in a botanical and philosophical light: this alone will enable us to judge with certainty how far and by what means

their destruction may be effected.
"The English thistles meriting no-

- "The English thittles meriting notice, as more or less noxious, are, r. Carduus Lanceolatus, or Spear Thifile 2. Carduus Nutans, Musk Thifile 3. Carduus Marianus, Musk Thifile 4. Carduus Marianus, Milk Thifile 5. Carduus Acanthoides, Welted Thifile 6. Casduus Crispus, Curled Thifile 7. Onoperdum Acanthium Cotton Teifile 8. Seratula Arvensis, Curled Thifile

or The Spear Thiftle is a large frong plant, about four feet high, the extre-mity of each leaf running out into a long point; its heads are large, and it grows very commonly by the fides of toads, near dunghills, and not unfre-

quently in fields and pastures.
"The Must Thisile grows to the height of two or three feet, the heads hang down, and the flowers fmell fomewhat like musk; it is often found oc

cupying whole fields, particularly on chalky or barren land.

The Marsh Taistle is very tall and prickly; its heads are numerous, small,

and of a red colour; it grows abundantly is wet meadows, also in woods.

"The Milk Thiflie has very large leaves, which are most commonly beautifully marbled with white. Near London it appears frequently on bank, by road fides; in which fituation we also meet with the Carled and Welter Thefe three feldom intrude

The Cotton Thiffle is diffinguished by its fize, (being perhaps the largest of the British herbaceous plants) and its white woolly leaves. It grows in the fame fituation as the three laft-men-

tioned.
"The Curfed Thiftle is more general in its growth than any of the others, and only by the fides of in its growth than any of the others, being found not only by the fides of roads univerfally, but also in arable land, and is not uncommon in meadows, even in such as are yearly mown. It is remarkably prickly, grows about three feet high; its heads are small, the slowers purple, and frequently white. The scales of the heads are smooth, and may in a particular manner be distinguished from all the others before mentioned, by having a usern before mentioned, by having a peren-nial root about the fize of a goofe-quill, which runs deep into the earth, and af-terwards creeps along horizontally.

"Of these thistles, all except the last are either annual or biennial; that is,

remain in the ground not more than one or two years, unless renewed by feed. The last, having a perennial root, continues in the earth, increasing,

and throwing up new shoots every year, "Hence it will appear obvious, that if the first seven species of thisses are cut down before they perfect their seed, the ground will be entirely cleared of them; and that the last-mentioned can no otherwise be destroyed, than by rooting it out, a precess which the folrooting it out, a precess which the fol-lowing experiments will fortowfully convince the rural economist to be im. practicable in large fields, and fearce to be performed even in an inclosed

Experiment 1. To ofcertain the effects of mowing the Seratula Aromfit.

" The Hon, Daines Barrington, who is ever anxious to promote useful en-quiries, desired me to try whether this kind of thistle could not be destroyed kind of thiftle could not be deftroyed by mowing. A fmall patch of them, about two feet square, was accordingly planted in a good garden, in the year 1777. In the course of the summer they were mown three several times, but without any other good effect than that of pieventing their seeding; for instead of being destroyed, the next foring they came up extremely vigofpring they came up extremely vigo-rous, not only on the bed where they were first planted, but all around it to the distance of fix feet.

14 Experiment 2. To afeertain the annual increase of the root of the Seratula Ar-

den a piece of the root of this thiffle, about the fize of a goofe-quill, and two inches long, with a small head of leaves, cut off the main-root, just as it was springing out of the ground. By the ad of November 1778, this small root had thrown out thoots, several of which had extended themselves to the distance of eight feet; some had even thrown up leaves fix feet from the original root, Most of these shoots which had thus far extended themselves were about six inches under ground-others had peactrated to the depth of two feet and a half; the whole together, when dug up and washed from the earth, weighed

four pounds.
"In the spring of 1779, contrary to
my expectation, this thistle again made its appearance on and about the spot where the small piece was originally planted. There were between fifty and fixty young heads, which must have sprung from those roots, which had penetrated deeper than the gardener was aware of, although he was particu-larly careful in extracting them. "From these experiments it appears

deducible, that no plants are more eafily defiroyed than the generality of thisses, or with more difficulty than this one; there being no foll, however poor, in which it will not vegetare, nor earth fo fliff but it will penetrate; in proportion, however, as the foil is rich, will be its increase.

"It were much to be wished, that an investigation of this evil had afforded a remedy; at prefent, none ap-pears. It is, therefore, to be feared, hat foudding, or cutting them down close to the ground, once or twice in the spring, is the only operation the farmer can perform to prevent their bad effects in destroying his crops on arable fand, and rendering his pastures unfeemly.

" As nature in the prefervation of this plant feems to have exerted her greatest powers, it is possible that in fome future period, uses may be disco-vered to which it has not yet been

spplied. "To the sis it is the highest treat; and I have been credibly informed, that in fome parts of Scotland, it is cut down as food for horfes.

"It would be well, if a plant fo noxious in fome respects could be ren-

dered beneficial in others.

"I am, &c. Bleffed THISTLE. See CARDUUS

BENEDICTUS.

Carline THISTLE, See CARLINE

THISTLE.
Diftaff THISTLE. See DISTATE TRISTLE, Fuller's THISTLE. See TEASLE,

Globe THISTLE. See GLOBE THIS-TIE.

Melon or Thorn THISTLE. See ME-

LON THISTLE.

Melancholy THISTLE. See ME-LANCHOLY THISTLE.

THISTLING. The action of cut-

Thorn Apple. See Thorn Apple.
Black Thorn. The Sloe tree.
Bow Thorn. See Box Thorn.

Christ's THORN. See CHRIST'S

Cockspur THORN, Service. Egyptian THORN. Acacia. See EVER-

Evergreen Thorn.
GREEN THORN.
Glassonbury Thorn.
DONBURY THORN. THORN. See GLAS-

Goar's

Goat's Thorn. See TRAGACANTH. How THORN. See HAWTHORN. Purging TRORN, See BUCKTHORN, White TRORN, See HAWTHORN, THOROUGH WAX, Hare's car; THREE-LEAVED GRASS, Trefoil, Clover.

THRASHING. The action of get-

ting the corn out of the fraw.
TREASHING Flor. The floor on

THEASE A floor. The floor on which the corn is thrashed.

THRAVE. A shock of corn, consisting of twenty-four sheaves.

THREAF. A handful, a bundle, THRIFT, [Static.] There are two or three kinds of this herb, natives of the Alps and salt-marshes of many parts of England; some years ago it was much esteemed for borders, but at present it is not much regarded. It may be propagated by parting the roots in autumn.

This plant will grow on old walls, and is easily propagated by throwing the feeds on old walls where there is the least earth to hold them.

THYME, There is a second to the second to t

THYME, [Thymus,] A well-known aromatic plant propagated in kitchen

gardens.

Botanits enumerate nine different species of thyme, besides several varieties; but they are all propagated either by seeds or parting the roots.

The most useful fort, either for culinary purposes, or for medicine, is the broad-leaved thyme, most commonly cultivated in the kitchen-garden; for the narrow-leaved kind never grow follarge. Their culture is, however, exactly the same.

large. Their culture is, however, exactly the fame.

The feeds of thyme, if it be raifed from thence, should be fown either in-March or October, but the former of these months is best, in a well-dug bed of light earth: taking care, as they are very small, not to drop them too close together, nor to bury them deep, for this last would make them rot. the plants are come up, they should be carefully over-looked and cleared from weeds, and if the feafon be dry, their growth will be greatly promoted by watering them twice a week, for fome time. In June, if it be a fpring fow-ing, the plants should be thinned to the distance of fix inches afunder every way, that they may have room to fpread: and those which are drawn out

may be fet in other beds, at the fame distance from each other. They must be watered till they have taken root, and will then require no farther care, except weeding them, till the winter, when they may be pulled up, and laid by in a dry place, for use. The autumnal sowing should be thinned as before, early the next spring, if it be listed shand till then; for there will be little danger of its resistant the severest windanger of its relifting the leverest win-ter of this country, especially if the plants grow on a dry, poor, and flony land. In rich ground, indeed, where they grow luxuriantly, they are forme-times destroyed by severe frosts. Thyme will even flourish upon a flore wall.

If the plants are propagated by parting their roots, this should also be done in March or October. The old plants should be saken up, their roots should be slipt into as many parts as can be, and these slips should be set fix or eight inches afunder every way, in beds of fresh light earth. If the season be dry until they have taken roots and with only one weed taken roots and with only one weed. taken root; and with only one w ing of them afterwards, they will foon

be fit for use.
To fave the feeds of thyme, some of the plants frould be left unremoved till the next fpring. They will then flower in June, and their feeds will ripen in July. These must be pulled up and beaten out as soon as they are ripe, for the first shower of rain would otherwise wash them all out of their hulks.

Thyme is fo great an impoverifier of the earth, that no crop will thrive well where that flood the year before, unless the ground be trenched deeper than the thyme rooted, and at the fame time enriched with dung, or fome other fuitable manure,

Lemon THYME. A variety of the

Mother of THYME, [Serpillam.] A Mother of THYME, [Serpillam.] A species of thyme growing wild on heaths.

TICHING. Setting up turfs in fuch a manner as they may be dried by the fun, and fit for being burnt for their aftes upon the land.

TIKE. An infect found in dogs,

fheep, cows, &c.
TILLABLE. Arable, fit for the plough, TILLAGE. . TILLAGE. The act or practice of tilling, or cultivating land.

TILLER. A branch of corn.

TO TILLER. To foread or thoot out.

TILLS. Tares or vetches.
TILTH. The condition of the earth after ploughing, &c.
TIMOTHY-GRASS. The name

of a grafs now cultivated in England, of which it is a native, though the feeds of it were carried from Virginia, by one Mr. Timothy Hanson, to North Carolina, where it is now cultivated by the inhabitants; and from this cirsumftance it received the name it now

It thrives most in low, damp, marshy grounds; for in fuch foil and fituation will produce a fine turf in three weeks from the time of fowing the feed. It is very luxuriant, grows to a confiderable height, and has in fome fort the appearance of wheat or rye, having a broad blade or leaf.

All forts of cattle are very fond of this herb whilft in a green growing flate; and it will not be improper to add, that they are nearly, if not quite, as fond of it, when dried and made into hay; but when it is intended for this use, it should always be mown when it is in full fap, just before it flowers, for if it is left longer before it is cut, being fo luxuriant and quick a grower, it becomes harfh, and is much dryer and more chirky food, than when

it is cut in its prime.

TINE. A tooth or spike. And hence the common phrase of giving two or three tinings, fignifies to draw the harrows twice or thrice over the

fame fpot of ground.

TIT. A small horse.

TOAD-FLAX. See TOAD-FLAX.

TOBACCO, [Nicotiana.] There are many species of this plant, but they are in general supposed too tender to grow from feeds in the full ground, to any degree of perfection in this country, fo require to be raifed in a hot-bed, after the following manner:

The feeds must be fown upon a moderate hot-bed in March, and when the plants are come up fit to remove, they should be transplanted into a new hotbed of a moderate warmth, about four inches afunder each way, observing to water and shade them until they have taken root; after which you must let

them have air in proportion to the warmth of the feafon, otherwife they will draw up very weak, and be thereby loss capable of enduring the open air:

less capable of enduring the open air:
you must also observe to water them
frequently, but while they are very
young it should not be given them in
too great quantities; though when
they are pretty strong, they will require
to have it often, and in plenty.

In this bed the plants should remain
until the beginning of May, by which
time (if they have succeeded well) they
will touch each other, therefore they
should be inured to bear the open air
gradually; afterwhich they must betaken up carefully, preserving a large ball
of earth to each root, and planted into of earth to each root, and planted into a rich light foil, in rows four feet afun-der, and the plants three feet diffance in the rows, observing to water them. until they have taken root; after which they will require no farther care, but only to keep them clear from weeds, until the plants begin to shew their flower-stems; at which time you should cut off the tops of them, that their leaves may be better nourished, whereby they will be rendered larger, and of a thicker substance. In August they will be full grown, when they should be cut for use; for if they are permitted to stand longer, their under leaves will begin to decay. This is to be understood for such plants as are propagated for use, but those plants which are defigned for ornament should be planted in the borders of the pleafure-garden, and permitted to grow their full height, where they will continue flowering from July till the frost puts a stop to them.

TOLU. See BALSAM OF TOLU. TOOTH-PICK. See SPANISH TOOTH-PICK

TOOTHWORT, [Dentaria.] There are three species, the five-leaved, the feven-leaved, and the three-leaved. The second fort is found growing naturally in some parts of England, the others are natives of the mountains of Italy and Austria. They are cultivated by feeds, or by parting the roots in October.

TORMENTIL, [Tormentilla.] The species are, 1. Tormentil with an erect stalk. 2. Creeping Tormentil.

The first fort grows wild on dry pastures and commons in most parts of England, England, so is never cultivated in gardens, this is so commonly known as to need no description. The roots of this plant have been frequently used for tanning of leather, in places where oak-bark is scarce. This root is also much used in medicine, and is accounted the best astringent in the whole vegetable kingdom.

The second fort is found in some particular places of England growing

particular places of England growing wild, but particularly in Oxfordshire. The fialks of this fort spread on the ground, and emit roots from their joints, whereby they propagate very fast: this is rarely preserved, unless in some botanic gardens for the sake of variety. It requires no care to propa-gate these plants, fince, if their roots are once planted in almost any foil or fituation, the plants will flourish without any other care but to prevent their being over-run with great weeds.

TOKE. Rowen, rowet, or winter

grafs, TOSET or Toyet. Half a bushed TOUCH ME NOT. Yellow bal Yellow bal-

famine, See BALSAMINE.

TOWER MUSTARD, [Turritis.]

This plant is kept in botanic gardens for variety, and is eafily propagated by fowing the feeds on old walls in au-

Ladies TRACES. Dogstones, TRAMEL. An instrument or de-vice, made sometimes of leather, but more usually of ropes, fitted to a horse's legs, to regulate his motion, and teach him to amble.

Tramel also signifies an iron instrument hanging in the chimney, whereon

to hang pots or kettles over the fire.

TRANSPLANTING. The act of removing trees or plants from the places where they are fowed, or raised, and

planting them in others,

TRAGACANTH, [Tragacantha.]
There are four species of this plant, natives of Italy, Spain, and the islands of the Archipelago. These plants may be propagated by feeds, when they can be procured from the countries where the plants grow naturally, which should be sown on a bed of fresh earth in April; and when the plants come up, they should be carefully kept clean from weeds. They may also be propa-gated by slips; the most proper time for which is April.

The gum tragacanth of the shops in the produce of this shrub.

TRAVELLER's JOY. Climbers.

TREE. The sirst and largest of the vegetable kind, consisting of a single trunk, out of which fpring forth bean

trunk, out of which firing forth branches and leaves

Standard trees are such as naturally rife to a great height, and are not tope. For the choice of trees of this kind, kind, to be transplanted out of a nurfery, Quintiney recommends us to such as are strait, fix seet high at least, and five or six inches thick at boxtom, and three or sour, at top; the back pretty smooth and shining, ass a token of their youth, and the good soil they grew is.

Dwarf trees are such as are kept low, and never suffered to have above half a foot or stem.

TREE CERMANDER. See TREE

GRAMANDER.

TREFOIL. See CLOVER.

Bean TREFOIL. See BEAN Trefoil.

Bird's Fost TREFOIL. See BIRD'sFOOT Trefoil.

Marsh TREFOIL. Buckbean.

Moon TREFOIL. Lucern.
Shrub TREFOIL, [Ptelea.] Th
plant is a native of North America, an rifes with an upright flem to the height of twelve or fourteen feet; there is another species, a native of the West-India islands. They are both propagated by seeds; the latter requires the affishance of a stove in winter.

Snail TARFOIL. See BASTARD

MEDICA.

TREACLE MUSTARD. See Treacle MUSTARD

TRELLISES. A contrivance for fupporting the branches of fruit trees, confifting of laths of wood croffing each other in the form of a lattice.

Some persons who are very curious in their fruit, and who do not mind a little extraordinary expence, erect trellises against their walls, extending from the inside of one pier to the nearest inside of the next; where the walls are built with piers, as they must be for this purpose. This framework is constructed in the same manner as that for espaliers, like which it need not be fet up till the trees are well spread, and begin to bear fruit plentifully; for they may be trained till then against any ordinary low ef-

Her of all-poles or other flender flicks, Her of all-poles or other flender flicks, in order not needlefsly to expole the trellifes to the injuries of the weather; because these, being generally made of regularly cut yellow-deal, or oak, and fun up higher, oost more. Every fourth upright rail or post of the trellis should be much stronger than the rest, and sastened to the wall with iron hooks, which it is best to fix in the wall at the time of building it. These strongest upright posts should be about three, but by no means more than four seet from each other. The cross rails may be slight, as for common espasiers, but be flight, as for common espailers, but they must be laid much closer together. For peach, nectarine, and apricot trees, for example, which, for the most part, produce their fruit on the young wood, the squares of the trellis frame should not exceed three or four inches; but for trees which continue to bear on the old wood, they may be five or fix inches wide, and for vines, eight or nine inches. The thoors of the trees are faftened to this frame with offer twigs, rope yarn, or any other folt bandage, in the same manner as they are to ef-paliers: for they must not be nailed to either, because that would injure the wood-work.

These trellises, which should project about two inches from the wall, are thought to contribute greatly to preferve the beauty of the fruit, by pre-venting its lying too close to the wall, whilst it has at the same time all the advantages of the heat reflected therefrom: nor are the walls where there are used hurt by driving nails into their joints, and drawing them out again every year, at the hazard of pulling out some of the mortar with them, and confequently of weakening the wall, and making holes in which finalls and other vermin take shelter and breed.

TRENCH. A furrow cut in the earth for draining land.

TRENDLE, Any thing that turns

To TREFALLOW. To plough

land the third time before fowing.

TROUGH. A long veffel for holding water, &c.
TRUG or TRUGG.

A hod for mortar.

TRUNDLE. A fort of carriage with low wheels, for carrying heavy and cumberfome loads.

TRUNK. The ftem or body of a tree; or the part between the ground and the place where it divides into

TRUSS. A bundle of hay, firaw, &c. A trus of hay must contain 56 pounds, or half a hundred weight; 36 truses make a load. In June, July, and August, a trus of new hay must weigh 60 pounds.

The as of Flowers. Signifies many flowers growing together on the head of a ftalk, as in the cowflip, auricula,

TRUELOVE, One berry.
TRUMPET FLOWER. Scarlet Talmine,

TRUMPET Honey fuckle. See Ho-

TUBEROSE, [Polianthes.] The va-rieties of this plant are the tuberose with a double flower, the striped-leaved tuberose, and the tuberose with a smaller flower; the last is mentioned by feveral authors as a diffinet fpecies, but

is certainly a variety.

This fort is frequent in the fouth of
France, from whence the roots have been often brought to England early in the fipring, before those roots have ar-rived from Italy which are annually imported; the stalks of this are weaker, and do not rise so high, and the flowers are smaller than those of the common tuberose, but in other respects is the same.

The tuberofe grows naturally in India, from whence it was first brought to Europe, where it now thrives in the warmer parts, as well as in its native foil. The Genoefe are the people who cultivate this plant, to furnish all the other countries where the roots cannot be propagated without great trouble and care, and from thence the roots are annually fent to England, Holland, and Germany. In most parts of Italy, Sicily, and Spain, the roots thrive and propagate without care, where they are

once planted.

This plant has been long cultivated in the English gardens, for the exceeding beauty and fragrancy of its flowers; the roots of this are annually brought from Genoa, by the persons who import orange-trees; for as these roots are too tender to thrive in the full ground in England, fo there are few persons who care to take the trou-

ble of nurling up their offsets till they become blowing roots, because it will be two or three years before they arrive to a proper fize for producing flowers; and as they must be protected from the frost in winter, the trouble and expense of covers is greater than the roots are worth, for they are generally fold pretty reasonable by those who import them

from Italy,

TUBULATED FLOWERS. A

term used to express those smaller
flowers, a great number of which go to
compose one large compound flower.

These are called tubulated in diffine-There are called tubulated in diffinc-tion from another kind of them, which are from their shape called ligulated. The tubulated stocules generally com-pose the disk, and the ligulated ones the radius of the compound flowers. The tubulated ones are formed into a hollow cylinder, which expands into a mouth at the top, and is divided into five equal segments, which stand ex-panded, and in some measure bent backwards.

TULIP, [Tulipa.] The distinct for-

backwards,

TULIP, [Tulipa.] The distinct species are two, 1. The tulip with a nodding slower, or Italian tulip. 2. The rulip with an erect flower. But the varieties are innumerable. The properties of a good tulip as distinguished by Miller, are, 2. It should have tall strong stem. 2. The flower should consist of fix leaves, three within, and three without; the former ought to be larger than the latter. 3. Their bottom should be proportioned to their top, and their upper part should be rounded off, and not terminate in a point. 4. and their upper part should be rounded off, and not terminate in a point. 4. These leaves, when opened, should neither turn inward, nor bend outward, but rather stand erect, and the flower should be of a middling fize, neither over large, nor too small. 5. The stripes should be small and regular, arising from the bottom of the slower for if there are any remarks. flower, for if there are any remains of the former felf-coloured bottom, the flower is in danger of lofing its ftripes again. The chives flould not be yel-low, but of a brown colour. When a flower has all these properties, it is effected a good one.

Tulips are generally divided into of flowering; as precoces, or early blowers, medias, or middling blowers, and ferotines, or late blowers; but VOL. II.

there is no occasion for making any more diffinctions than two, viz. early

there is no occasion for making any more distinctions than two, viz. early and late showers.

The early-blowing tulips are not near so fair, nor rise half so high, as the late ones, but ase chiefly valued for appearing so early in the spring; some of which will shower the middle of March in mild seasons, if planted in a warm border near a wall, pale, hedge, or other shelter, and a month after the others will succeed them; so that they keep showering until the general season for the late showers to blow, which is toward the end of April.

The roots of the early-blowing tulips should be planted the beginning of September in a warm border, near a wall, pale, or sledge, because if they are put into an open spot of ground, their buds are in danger of suffering by morning strosts in the spring. The foil for these should be renewed every year, where people intend to have them fair. The best soil for this purpose is that which is taken from a light loamy pasture, with the turf sotted amongst ir, and to this should be added a sourth part of sea-sand. This mixture may be laid about eighteen inches deep, which will be sufficient, for these need not be planted more than four of five inches deep at most. The offsets should not be planted amongst the blowing roots, but in a border by themselves, where they may be planted pretty close together, especially if they are small; but these should be taken up when their leaves decay, in the same manner as the blowing roots, otherwise they would rot; for these are not so hardy as the late blowers, nor do they increase haif so fast as those, so that a greater care is required so preserve the offsets of them.

When the rulips come up in the foring, the arth upon the surface of them.

When the rulips come up In the fpring, the arth upon the furface of the borders should be gently stirred and cleared from weeds; and as the buds appear, if the feafon should prove se-vere, it will be of great service to cover them with mats, for want of which many times they are blighted, and their flower-buds decay before they blow, which is often injurious to the roots, as is also the cropping of the flowers, fo foon as they are blown, because their roots, which are formed new every year, are not at that time arrived to

their full magnitude, and are hereby deprived of proper nourifiment.

If, when their flowers are blown, the fealon should prove very warm, it will be proper to shade them with mats, acc. in the heat of the day, as also if the nights are frosty, they should be in like manner covered, whereby they may be preserved a long time in heauty; but, when their showers are decayed, and their seed vesses begin to swell, and their seed vesses off just at the top of the stalks, because if they are parmitted to seed, it will injure the roots.

parmitted to feed, it will injure the roots.

When the leaves of these flowers are decayed (which will be before the late blowers are out of flower,) their roots should be taken up, and spread upon mats in a shady place to dry; after which they should be cleared from their filth, and put up is a dry place, where vermin cannot come to them, until the season for planting them again, being very careful to preserve every fort separate, that you may know how to dispose of them at the time for planting them again, because it is the better way to plant all the roots of each fort together and not to intermix them, as is commonly practised in most other kinds of flowers; for as there are few of them which blow at the same time, so, when the several roots of one fort are scattered through a whole border, they make but an indifferent appearance; whereas, when twenty or thirty roots of the same fort are placed together, they will all flower at the same time, and have a better effect.

When the flowers are saded, the heads of all the fine forts should be broken off to prevent their seeding; for if this be not observed, they will not flower near

to prevent their feeding; for if this be not observed, they will not flower near so well the following year, nor will their for well the following year, nor will their ftripes continue to perfect; this will also cause their stems to decay sooner than otherwise they would do, so that their roots may be taken up in June; for they should not remain in the ground, after their leaves are decayed. In taking the roots out of the ground, you must be very careful not to brusse or cut them, which will endanger their rotting, and, if possible, it should be done a day or two after rain. When done a day or two after rain. When these roots are taken out of the ground, they must be cleared from their old cowers, and all forts of filth, and fpread

upon mats in a shady place to dry; after which they should be put up in a dry place, where vermin cannot get to them, observing to keep every fort separated; but they should not be kept too close from the air, nor suffered to lie in heaps together, less they should grow mouldy, for if any of the roots once take the mould, they commonly not when they are planted again.

The offsets of these roots, which are not large enough to produce slowers the succeeding year, should be also put by themselves, keeping each fort distinct; these should be planted about a month easier in autumn than the blowing roots, in particular beds by themselves in the dower nursery, where they may not be exposed to public view; but the earth of the beds should be prepared for them in the same manner as for larger roots; these should not be planted above five inches deep, because they are not strong enough to push through so great covering of the earth as the old roots; they may also be placed much nearer together than thase which are to flower, and in one year most of them will become strong enough to some they are not strong enough to push to some those amongst those of the same kinds.

Airican Tulir, Bloodstower, Tulir Tuzz, Tuspifers. The tulip-tree is a native of North-America; it is a tree of the first magnitude, and is generally known through all the English settlements by the title of poplar. Of late years there have been great numbers of these trees raised from seeds in the English gardens, so that now they are become common in the nurseries about London; and the same manner.

in the English gardens, so that now the are become common in the nursers are occome common in the nurieries about London; and there are many of them in feveral parts of England which do annually produce flowers. The first tree of this kind which flowered here, was in the gardens of the late Earl of Peterborough, at Parsons Green, near Fulham, which was planted in a wilderness among other trees; before this was planted in the open air, the few plants which were then in the English gardens, were planted in potsand hou-fed in winter, supposing they were too tender to live in the open air; but this tree, foon after it is was placed in the full ground, convinced the gardeners of their mistake, by the great progress it made, while those which were kept in post and tubs increased flowly in their growth; so that afterward there were many others planted in the full ground, which are now arrived to a large fize, especially those which are planted in a moit foil. One of the handsomest trees of this kind, near London, is in the garden of Waltham Abbey; and at Wilton, the seat of the Earl of Pembroke, there are some trees of great bulk; but the old tree at Parsons Green is quite destroyed by the other trees which were suffered to over-hang it, and rob it of its nourishment, from the sear of taking them down, lest, by admitting the cold air, the tulip-tree might be injured. The young shoots of this tree are covered with a smooth purplish hark; they are garnished with large leaves, whose soot, staks are four inches long; they are ranged alternates, the leaves are of a singular form, being the solution. The solution of their natural growth.

They are tound in most parts of the northern continent is most parts of the Cape of Florids to New England, where the timber is of great use, the trunk being trequently hollowed, and made into boats big enough to carry a number of men.

This tree is propagated by seeds, brought from North-America, some it, and rob it of its nourishment, from solution to the height of twenty seat of the solution to the height of twenty seat of the cape of Florids to New England, where the timber is of great use, the trunk being trequently hollowed, and number of men.

This tree is propagated by seeds, brought from North-America, form solution to the height of twenty seat of the cape of Florids to New England, where the timber is of great use, the trunk being trequently hollowed, and number of men.

This tree is propagated by seeds, brought from North-America, form truck eing trees of this tree, growing in North-America, form truck eing trees of this tree, growing in North-America, form tree, growing in North-America, form tree, growing in North-America, form trees, which will be propagated by seeds, brought from North-America, form trees, which will be pots and tubs increased slowly in their growth; so that afterward there were many others planted in the full ground, which are now arrived to a large size, especially those which are planted in a moi't soil. One of the handsomest trees of this kind, near London, is in the garden of Waltham Abbey; and at Wilton, the seat of the Earl of Pembroke, there are some trees of great bulk; but the old tree at Parsons Green is quite destroyed by the other trees which were suffered to over-hang it, and rob it of its nourishment, from the sear of taking them down, lest, hy admitting the cold air, the tulip-tree might be injured. The young shoots of this tree are covered with a smooth purplish hark; they are garnished with large leaves, whose soot stalks are sour inches long; they are ranged atternates. inches long; they are ranged alternates, the leaves are of a fingular form, being divided into three lobes; the middle lobe is blunt and hollowed at the point, divided into three lobes; the middle lobe is blunt and hollowed at the point, appearing as if it had been cut with failfars. The two fide lobes are rounded, and end in blunt points. The leaves are from four to five inches broad near their bale, and about four inches long from the foot-flalk to the point, having a firong mid-rib, which is formed by the prolongation of the foot-flalk. From the mid-rib run many transverse veins to she borders, which ramify into several smaller. The upper surface of the leaves is smooth, and of a lucid green, the under is of a pale green. The flowers are produced at the end of the branches; they are composed of fix petals, three without and three within; which form a fort of hell-shaped flower, from whence the inhabitants of North-America gives it the title of tulip. These petals are marked with green, yellow, and red spots, so make a sine appearance when the trees are well charged with flowers. The time of this ree's flowering is in July, and when the slowers drop, the germen swells and forms a kind of cone, but these seldom ripen in England.

Mr. Catesby, in his Natural History

forms a kind of cone, but these seldom ripen in Englands.

Mr. Catesby, in his Natural History of Carolina, says, "There are some of these trees in America which are thirty feet in circumference; the boughs are unequal and irregular, making several bends or elbows, which render the trees distinguishable at a great distance, even

TUPP. A ram.

Turring Time. Ramming time.

TURBITH, [Turringm.] The cortical part of the root of an Indian convolvulus, brought to us in oblong pieces, of a brown or all colour on the outfide, and whitish withins the best is ponderous, not weinkled, easy to break, and discovers a large quantity of refinous matter to the eye: its taste is at first sweetish; chewed for a little time, it becomes acrid, pungent, and naulcous. This root is a cathartic, not of the safes or most certain kind.

TURF. A hlackish suphymeous earth, used in several parts of England, Holland, and Flanders, as suel.

Holland, and Flanders, as fuel.

In Flanders, their turf is dry or pared from off the furface of the earth, and cut in form of bricks. The fedge, or foecies of grafs growing very thick on the turf earth, conitrbutes greatly, when dry, to the maintenance of the

fire.

TURKEY. The turkey is a very large and fine bird, and exceedingly well worth the regard of the prudent hushandman. There are advantages and disadvantages attending upon the raising of this, as other kinds of fowl; but all being weighed together, the former far outweigh the latter, and the interest of the farmer will lead him to which were seriously of receiving them think very feriously of receiving them

as a part of his stock.

There is also this farther encouragement to his industry, that a great many of the disadvantages attending the keeping of this fowl, may be remedie

or prevented by prudent management: and that there is no kind among all the poultry which will efford to many op-porturnies of improvement. There are several breeds of the turkey, much more different than those among the cock and hen kinds; and the properly choosing among these, will greatly add to the profit and ease of keeping them. Among the advantages of the turkey may be reckoned his fize, the price he

fetches at market when in good condition, and the quantity of his dung, which is as valuable as eny other kind whatfoever. He is fit for fale also in the common condition at a good price; and his feathers are not to be neglected, in counting up thefe benefits.

Among the difadvantages of turkeys are to be reckoned their straggling difposition, their being liable to many aceidents, the difficulty of raising them, and the frequent destruction of them by vermin; as also the quantity of corn they devour. If fed altogether with this, they will eat more than they can ever be worth; but to this it may be answered, that the feeding them with corn is not necessary, for they will in general provide very well for them-selves; and in the same manner we shall shew that every other objection made against them may be removed: and that it will be greatly to the far-mer's advantage to raife, hem in most

This kind of bird always fucceeds best for the owner in open countries, because these are not so much insested with vermin; and they are subject to ramble and be destroyed more than any kind, as observed already. This may be a very reasonable caution for the husbandman-not to keep them in improper places; but we have counties enough in England that are not at all

liable to that objection.

The first article to be considered in respect of the breeding of turkeys is the age of the cock and her, cock must be young, for the brood is never good unless he be in the vigour of his life; the hen may be older, for her care in fitting and leading them is all that is required of her, and in the latter article the cock often affifts her, when he is of a kindly fort.

The turkey cock for breeding should be about two years old; and the best

time for the hen is at about four years; the may be employed in breeding till the is its, but when the is too young, the is most apt to neglect the brood; and when the cock is at all declined from his strength, they are weakly

Turkeys are not natural to our kingdom, and there is therefore always a wildness about them. The semale of this kind does not lay familiarly and conveniently about houses as the common hen, but rambles to a distance, and makes her neft among thickets: for this reason her brood is from the beginning more liable to accidents The farmer must therefore be watchful about the time of her laying, and take care to get her into the hen-house, and compel her to lay there; for this is the first precaution, and it is a very essential one about the brood,

It is a custom with some, if there be convenience of thickets, or a little wood near the house, to let them take their own way, and lay and fit there; and in the hardier breeds, with a little care of the young when new hatched, this will do very well; but there is never any harm in the other method, whatever be the breed; and there is a much

greater certainty of fuccefs.

The turkey naturally begins to lay in the month of March, and will fit in April. The eggs are very large, and are excellent in the way of food, particularly they have a reftorative virtue.

The proper number of eggs to let the hen fit upon is eleven, some advice thirteen, but commonly there is less success in that avaritious method, for

they cannot all be well covered.

The turkey fits about feven or cight and twenty days. Some of the eggs will fometimes be hatched at five or fix and twenty, and fome will lig this think the middle than in the middle the middle than in the m ty, but the middle time is the more

natural.

The hatching of the broad is th time when the great care is required in their management. The tunkey being naturally a bird of a warmer climate, is chilly in this; and particularly the tender young. They must be kept very carefully at first, especially such as happen to hatch before others of the same broad. brood; the best way is to put them into a basket with wool in it, and set them before the fire, at fuch a distance as to be gently warmed.

From

From this time the farmer is to depute fomebody to act as a parent for them, for the hen is not to be expected to do much; they will follow her, and should be permitted to do so in the warm part of the day, and the should be managed to take care of them. The cock also will often watch over them, keep them together, and defend The cock also will often watch over them, keep them together, and defend them better than the hen; but neither are to be traffed without careful looking after. The proper method of managing them is this. They are to be kept in a warm and close place altogether, while they are very young; and when they have got some strength, they are to be let out two hours after the sun is up in the morning and as the fun is up in the morning, and ta-ken in again before he fets in the even-ing; and in the mean time they should only be let into some walled place, or fome inclosure fo fecure that they can-

first they are to be sed in the bout, and afterwards in this open place; and at all times they must be allowed a sufficient supply of food, for their parents take at best but little care to help them to any. The very best food for them is green fresh cheese, and while they are young, their drink should be only new milk; afterwards milk and water, making it weaker and weaker till they come to water alone, which they will then drink wherever they can find it. Curds are a very good

they can find it. Curds are a very good food for them, but not fo well as cheefe. A very wholfome food alfo is a kind of thick hafty pudding made of oatmeal, water, and aligned new milk among it. As the trackerses of the young is one great article in the difadvantage of the turkey, indeed the greatest, care must be taken that the hen do not fet herfelf at too early a season. If the young are hatched in cold weather, it is searce possible to rear them without considerable loss; but if they be proconsiderable loss; but if they be produced toward the latter end of May, which indeed is the most natural time, as well as the best, they will have a

much better chance,
It is only while young that this bird is fo exceedingly tender; for, when grown up, they are not only ftrong enough to defend themselves; but they always low to keep in flocks together.

"Most of our housewives, says a always low to keep in flocks together, "Most of our housewives, says a Swedish author on husbandry, have

long despaired of success in rearing turkeys, and complained that the pro fit rarely indemnifies them for their trouble and loss of time; whereas, continues he, little more is to be done than to plunge the chick into a veffel of cold water, the very hour, or if that cannot be, the day it is hatched, forcing it to fwallow one whole pepper-corn, and then restoring it to its mother. From that time it will become hardy, and fear the cold no more than a hen's chick. After which it must be remembered that these useful creatures are subject to one particular malad whilft they are young, which carries them off in a few days. When they begin to droop, examine carefully the feathers on their rump, and you will find two or three, whose quill part is filled with blood. Upon drawing these the chick recovers, and after that requires no other care than what is commonly bestowed on poultry that range the court-yard.

"Thefe articles are too true to b denied; and in proof of the fuccefs. three parifhes in Sweden have, for many years, gained feveral hundred pounds by rearing and felling turkeys,"

TURNIP, [Rapa.] Miller reckons three distinct species of turnips, the round, the oblong, and the French turnip; the first is the common field turnip, and of this there are feveral varieties, but the large green topped is chiefly preferred above all the reft,

Perhaps there has never been greater improvement in husbandry than fowing turnips, not only for the advantage of keeping a larger quantity of flock than could otherwise be done, but also the great advantage which the ground will receive from the turnips themselves, especially if they are eaten off the land by sheep. Turnips will grow on strong land as well as on light land, but light land will best bear the foot of the theep, when feeding off.
Turnips thould be fown according

as they may be wanted, from Midfun mer to a fortnight following, and will require a winter and fummer fallow of the land thoroughly to clean it; dung will be proper where it can be afforded as the turnips will grow the fafter, and be fooner out of the reach of the fly. About a pint of feed is enough for an acre; and foon after they put forth the field leaf, they Goodd be haed and that roughly thinned, and foon after they old be hoed again with a fix or feven inch hos; this will keep down a annual weeds, and wonderfully affilt ips, by drawing the earth to the roots ad leaving them fufficient room to

We would advise the farmer to be ery careful to obtain his feed of a good fort, and at a distance, from a person

on whom he can rely:

If the fly should attack the turnips, we advise him to sow some lime kiln wood-aftes which have never been vetted over the turnips, while the dew is on them, as from our own experience

There has been another method practifed in the turnip hufbandry, and that is by drilling, which by those who have tried it, is much recommended but flill, we fancy the broad-cast will outlive the other. Farmers are a prudent fet of men, and not eafily mifled into the schemes of uncertainty; when-ever they find the practice is really good they will follow it, but they must ave better evidence than is generally

When caterpillars attack the tur-

hungry poultry.

When the turnips are all off, Mr. Miller fays one ploughing will do for harley; -it may be fo, but we will take spon ourselves to say that three will do ester; nor would we chuse to trust to one ploughing for barley. Indeed when the feafon ran backward, we might venture to trust white oats to one ploughing, but nothing but necefhey thould induce us to do that.

TURNIP-ROOTED Cabbage. See

CABBAGE.
TURNSOLE. See HELIOTROPE. TURPENTINE, [Terebinthia.] The fpecies of turpentines kept in the druggifts shops are, the Chian or cypress surpentine, the Venice turpentine, the Strafbu g turpentine, and the common surpentine,

The Chian or cypress turpentine is generally about the confiftence of thick honey, very tenacious, clear, and almost transparent, of a white colour, with a caft of yellow, and frequently of blue; it has a warm, pungent, bitterift tafte, and a fragrant fuell, more accessio

than any of the other turpentines, This juice is the product of the common terebinth is evergrow tree forth, which stows frontingoully the warmer climeter, and endure to colds of our owns. The surpensi brought to us, is extracted in the islands whose name, it bears, by wounding the trunk and branches alittle after the bids have come forth the juice issues himpid, and clear as water, and by degrees thickens into the condisease in which we meet with it. A like juice exuding from this tree in the eastern countries, infpidated by flow fire, is of frequent use, as a mass ticatory, among she Perhan ladies, who (as Kompfer informs us) are consis-nually chewing it, in order to faften and whiten the teeth, fweeten the

breath, and promote appetite.

Venice turpentine is usually thingen than any of the other forts, of a clear, whitis, or pale yellowith colour, a hot pungent, bitterifb, difagrecable talle, and a firong fmell, without any thin of the fine aromatic flavour of the Chian kind.

The true Venice suspentine is al tained from the larch, a large tree growing in great abundance upon the Alps and Pyrenean mountains, and not uncommon in the English gardens. What is usually met with in the shops, under the name of Venice turpesti comes from New England; of what tree it is the produce, we have no certain account the finer kinds of it are in appearance and quality not con-fiderably different from the true fort above described

Strafburgh turpentine is, as we generally meet with it, of a middle confiftence between the two foregoing, more transparent, and lefs tenacious than either; its colour a yellowith brown: Its smell is very fragrant, and more agreeable than that of any of the other turpentines, except the Chian; in tafte it is the bittered, yet the leaft

acrid.

Common turpentine is the coarlest, heavieft, in talle and smell the most disagreeable, of all the forts; it is about the confidence of honey, of an opake brownish white colour.

This is obtained from the wild pine, a low unhandsome tree, common in different

different parts of Europe: this tree is extremely remous, and remarkably subject to a disease from a redundance and extravasation of its resin, insomuch that, without due evacuation, it swells and bursts. The juice, as it is successed in the tree, is received in treaches made in the earth, and afterwards freed from the groffer impurities by colature through wicker haskets.

ches made in the earth, and atterwards freed from the groffer impurities by colature through wicker bafkets.

All these jusces yield in distillation with water, an highly penetrating effential oil, a brittle inspid refin remaining behind. With regard to their medical virtues, they promote unine, cleame the parts concerned in the evacuation thereof, and deterge internal unless in general. And it the same time, like other bitter hot substances, firengthen the tope of the vestes; they have an advantage above most other acrid directions, that they gently loolen the belly. They are principally recommended in gleets, the fluot albus, and the like; like by some in calculous complaints: where these last proceed from fand or gravel, formed into a mass by viscid mucous matter, the turpentines, by displaying the muchs, promote the expussion of the land; but where a calculus is formed, they can do no service, and only ineffectually intricate or instance with instanmation, these successory and the like successory to be abstanced from, as this symptom is increased, and not unfrequently occasioned by them. It is observable, that the surpensines impact, soon after taking them, a violet smell to the urine; and have this effect, though applied only externally to remote parts; particularly the Venice

fulliflances, to as deally to sulcable the forth, and falls of this thorn.

VECE LATION "See of whereby provide the provides of whereby provides of which their neur firment and functions are underlook three principal functions are underlook wiz, nutration, increase, and whereton, and whereby and the serial has been and the from the serial has been and the remaining hours or hand where to produce plants; which wirthey provided for products a which wirthey provided the fact products as their the conferent taxwill to all active conferences at times, and this faculty but quences at times, and this faculty which full which the conference of the conference o

plants;

fort. This is accounted the most powerful as a diuretic and detergent; and the Chian and Strasburgh as corroborants: the Strasburgh is an ingredient in the mercurial pills and Locatellue's balsam, and the Chian in mithridate and theriaca. The common turpentine, as being the most offensive, is rarely given internally. Its principal use is in plaisters and eintments, among farriers, and for the distillation of the oil or spirit, as it is called. The dose of these juices is from a scruple as a dram and a half: they are most commodously taken in the form of a holius, or distolved in watery liquous by the mediation of the volk of an egg or muestage. Of the distilled oil, a few drops are a sufficient dose; thus a most potent, stimulating, descreentduretic, oftentumes greatly heats acconstitution, and requires the utrace caution in its exhibition.

Tass.

Venice TURPENTENE Tree. The
Larch tree.

TUTSAN. St. John's Worts.

TWIFALLOWING. Plepabers

the ground a fecond time.

Hiss Two? Inc., [Name land at the provided at the p

E. See Burost particularly the vicable the epilephes proceeding from a debility of the zervous fyttem ... it was hist brought into effects in the cales by Tablus Culumna, who by using the powdened root, in the dote of hide a spooning was oured of an inverence epileply aries many orber receiving had been wied in vain. Repeated experience has fines confirmed his wifeyeer in this care orders and the prefere profiles in a confiderable they apon it. I hecomman dofe is the med cruple at a chair, the strain and as the man negative as tes until telland the work is most effected ally convented by a suitable addition

Chiront pane of Europa: this tree is fort.A.This is some of the sing of

subject to a different from a reconnect of the Chian and

faccing est submentation of the property of the continuous of the position of the continuous of the co

rante: the Smallett

VALE. Low ground; a valley. VALERIAN, [Valeriana.] There are many species of this plant, but that chiefly effeemed, is the mountain, or wild valerian, the roots of which are

much used in medicine.

This root confifts of a number of firings or fibres matted together, iffu-ing from one common head; of a whi-tift or pale brownish colour: its smell is strong, like a mixture of aromatics with feetids; the tafte unpleafantly warm, bitterifh, and subacrid. There is another wild valerian, with broader leaves, of a deeper and thining green colour, met with in watery places, Both forts have hitherto been used indiscriminately, and Linnaus has joined them into one species, under the name of valerians folis commiss pinnatis. Our college have restrained the shops to the first, which is considerably the strongeff, and lofes of its quality, if trans-planted into fuch foils as the other naturally delights in. The roots, produced in low watery grounds, have a remarkably faint fmell in comparison of the others, and sometimes scarce any at all. Wild valerian is a medicine of great use in nervous diforders, and is particularly serviceable in epilepsies proceeding from a debility of the nervous fystem. It was first brought into esteem in these cases by Fabius Columna, who by taking the powdered root, in the dole of half a spoonful, was cured of an inveterate epilepfy after many other medicines had been tried in vain. Repeated experience has fince confirmed its efficacy in this diforder; and the present practice lays considerable stress upon it. The common dose is from a scruple to a dram, in infusion from one to two drams. Its unpleasant flavour is most effectually concealed by a fuitable addition of mace.

colature through wicker builters. VE G

with water.

STATE OF

Greek VALERIAN. See GREEK

ficed from the groffer impurities by

VALUE IAN. VAN. An infirmment to winnow

VASCULIFEROUS Plants. Such

VASCULIFEROUS Plants. Such whose seeds are contained in vessels divided into cells.

VAT. A vessel for holding wine, ale, beer, cyder, &c. in the time of their preparation.

UDDER. That part of a cow, mare, ewe, &c. where the milk is prepared, answering to the breasts in women.

VEGETABLE. A term applied to all plants, considered as capable of growth, i. e. all natural bodies which have parts organically formed for generation and accretion, but not sensation.

vegetables, according to the analyses made of them by chemistry, are distinguishable into two grand tribes, the acid and the alkaline; the first affording a volatile acid, and the second a volotile alkali, upon a dry distillation; thus guaiacum, cedar, box, cinnamon, cloves, forres, mint, balm, &c. afford an acid; but garlic, onions, horse-radish, scurvy-grass, mustard, &c. afford an alkali, which restified, is hardly distinguishable from that of animal diftinguishable from that of animal fubstances, so as nearly to resemble the spirit and salt of hartshorn.

VEGETATION. The act whereby plants receive their nourishment and growths; of which, three principal functions are understood, viz. nutrition, increase, and generation.

From Scripture we learn, that the earth has been endued, from the beginning, with a certain feminal virtue to produce plants; which virtue, pro-ceeding from God, was not confined to the first production of things, but extends likewife to all future confequences of times; and this faculty which the earth has of producing

plants, is from this commandment of the Almighty: " Let the earth bring forth grass, the herb yielding feed, and the fruit-tree yielding fruit after his kind, whose seed is in itself upon the earth; and it was fo.'

VELLING. Ploughing, or cutting up the turf, or upper furface of the ground, in order to its being burnt.

VENTILATOR. A machine by which the noxious air of any close place (as an hospital, jail, ship, chamber, granary, &c.) may be changed for fresh air.

VENUS' COMB. See Sweet FERN. VENUS' LOOKING GLASS. Com Violet.

VENUS' NAVELWORT. See Venus'

NAVEL WORT.

VER J'IICE. A liquor obtained from grapes or apples too acid for wine or cyder. It is generally made in England from the juice of the crab, or wild apple.

VERMIN. A collective name including all kinds of fmall animals, that are troublesome to men, beafts,

corn, fruits, &c.

VERNAL. Something belonging to

the fpring feafon,

VERTICULATE Plants. produce their flowers round the joints of the stalks in whorles; as hystop,

mint, thyme, &c.
VERVAIN, [Vervena.] This plant is very common on the fides of roads, foot-paths, and farm-yards, near habitations; for although there is fcarce any part of England, in which this is not found in plenty, yet it is never found above a quarter of a mile from a house; which occasioned its being called Simpler's Joy, because where-ever this plant is found growing, it is a fure token of a house being near; this is'a certain fact, but not easy to be accounted for. It is rarely cultivated in gardens, but is the fort directed by the College of Physicians for medicinal use, and is brought to the markets by those who gather it in the fields.

There are many other species of vervain, natives of different counties, some of which are too tender to bear the cold of our climate, and require the affiftance of the green-house and

stove.

VERVAIN MALLOW. Hollyhock. VETCH. See TARE. You, II.

Bitter VETCH. See BITTER VETCH.

Chicklin VETCH. See CHICKLIN VETCH.

Crimfon Grafs VITCH. Vetch.

Hatchet YETCH, [Securidaca.] This plant grows naturally in the corn-fields in Spain and Italy; it is annual, an hath trailing herbaceous stalks, w grow a foot and a half long, dividing into many branches, which spread on the ground, garnified with winged leaves, composed of seven or eight pair of oval obtuse lobes terminated by an

odd one, of a deep green and fmooth.
It is propagated by fowing the feeds in borders of light earth in the fpring, in the places where the plants are to abide, for they feldom fucceed well if they are transplanted; they should be allowed at least two feet distance, because their branches trail upon the ground. When the plants come they will require no other care but to thin them where they are too close, and keep them clean from weeds. few of these plants may be admitted into every good garden for variety, though there is no great beauty in their flowers.

Horfe-floe VITCH. See Hoasz

VETCH.

Liquorice VETCH. See WILD LI-QUORICE.

Milk VETCH. Liquorice Vetch. VETCHLING, [Apaca.] This plant is found wild in divers parts of England on arable land, but is feldom preferved in gardens. It is an annual plant, which perifhes foon after the

feeds are perfected.

VINE, [Vitis.] There are a great number of grapes cultivated in the gardens, and are all propagated either from layers or cuttings, the latter of which is the more preferable method; for the roots of vines do not grow throng and woody, as in most forts of trees, but are long, slender, and pliable; therefore when they are taken out of the ground they feldom strike out any fibres from the weak roots, which gene-rally shrivel and dry; so that they rather retard than help the plants in their growth, by preventing the new fibres from pushing out; for which reason it is better to plant a good cutting than a rooted plant, provided it be well chosen, chofen, for there is little danger of its

growing.
But as there are few perfons who make choice of proper cuttings, or at leaft that form their cuttings rightly in England, fo it will be proper to give directions for this in the first place. You should always make choice of such thoots as are firong and well ripened of the last year's growth; these should be out from the old vine, just below the place where they were produced, taking a knot or piece of the two-years wood to each, which should be pruned smooth; then you should cut off the upper part of the shoots, so as to leave the cutting about fixteen inches long. When the piece or knot of old wood is cut at both ends, near the young shoot, the cuttings will resemble a little mal-let; from whence Columella gives the title of malleolus to the vine-cuttings. In making the cuttings after this manthere can be but one taken from ch fhoot; whereas most persons cut them into lengths of about a foot, and plant them all, which is very wrong, for the upper part of the shoots are never so well ripened as the lower, which was produced early in the spring, and has had the whole summer to harden; fo that if they take root, they never make fo good plants, for the wood of those cuttings being spongy and soft, admits the moisture too freely, whereby the plants will be luxuriant in growth, but never fo fruitful as fuch whose wood

is clofer and more compact.

When the cuttings are thus prepared, if they are not then planted, they should be placed with their lower part in the ground in a dry foil, laying some litter upon their upper parts to pre-vent them from drying: in this fitua-tion they may remain till the beginning of April, (which is the best time for planting them) when you should take them out, and wash them from the filth they have contracted; and if you find them very dry, you should let them stand with their lower parts in water fix or eight hours, which will diffen their veffels, and dispose them for ta-king root. Then the ground being before prepared where the plants are defigned to remain (whether against walls or for ftandards, for they should not be removed again) the cuttings should be planted; but in preparing the ground you should consider the na-

ture of the foil, which, if firong, and inclinable to wet, is by no means proper for grapes; therefore where it fo happens, you should open a trench where the cuttings are to be planted, which should be filled with lime rubbish, the better to drain off the moifture; then raife the border with fresh light earth about two feet thick, fo that it may be at least a foot above the level of the ground; then you fhould open the holes at about fix feet diffance from each other, putting one good ftrong cutting into each hole, which should be laid a little sloping, that their tops may incline to the wall: but it must be put in fo deep, as that the uppermost eye may be level with the surface of the ground; for when any part of the cutting is left above ground, as is the common method used by the English gardeners, most of the buds attempt to fhoot, fo that the strength of the cuttings is divided to nourish fo many shoots, which must of course be weaker than if only one of them grew; whereas, on the contrary, by burying the whole cutting in the ground, the fap is all employed on one fingle shoot, which confequently will be much ftronger; befides, the fun and air are apt to dry that part of the cutting which remains above ground, and fo often prevents their buds from fhooting.

Then having placed the cutting into the ground, you fould fill up the hole gently, preffing down the earth with your foot close about it, and raise a lit-tle hill just upon the top of the cutting, to cover the upper eye quite over, which will prevent it from drying; this being done, there is nothing more necessary but to keep the ground clear from weeds until the cuttings begin to shoot; at which time you should look over them carefully, to rub off any fmall thoots, if such are produced, fas-tening the first main thoot to the wall, which should be constantly trained up, as it is extended in length, to prevent its breaking or hanging down; you must continue to look over these ence in about three weeks during the fum-mer feafon, constantly rebbing off all lateral shoots which are produced; and be fore to keep the ground conftantly clear from weeds, which, if suffered to grow, will exhauft the goodness of the foil and starve the cuttings.

The Michaelmas following, if your cuttings have produced ftrong shoots, you should prune them down to two

In the fpring, after the cold weather is paft, you must gently dig up the borders to loofen the earth; but you must be very careful in doing this, not to injure the roots of the vines; you should also raise the earth up to the ftems of the plants, fo as to cover the old wood, but not so deep as to cover either of the eyes of the laft years wood. After this they will require no farther care until they begin to thoot, when you should look over them carefully, to rub off all weak dangling shoots, leaving no more than the two shoots, which are produced from the two ey of the last year's wood, which should be fastened to the walls and fo from this, until the vines have done shoo ing, you should look them over once in three weeks or a month, to rub off all lateral floots as they are produced, and to fasten the main shoots to the wall as they are extended in length, which must not be shortened before the middie or latter end of July, when it will be proper to nip off their tops, which will frengthen the lower eyes, and du-ring the fummer feafon you must con-flantly keep the ground clear from weeds; nor fhould you permit any fort of plants to grow near the vines, which would not only rob them of nourishment, but shade the lower parts of the shoots, and thereby prevent their ripening; which will not only cause their wood to be spongy and luxuriant, but render it less fruitful.

As foon as the leaves begin to drop in autumn, you should prune these young vines again, leaving three buds to each of the shoots, provided they are strong; otherwise it is better to shorten them down to two eyes if the good, for it is a very wrong practice to leave much wood upon young vines, or to leave their shoots too long, which greatly weakens the roots; then you should fasten them to the wall, spreading them out horizontally each way, that there may be room to train the new shoots the following summer, and in the fpring the borders must be dig-

The third feafon you must go over the vines again, as soon as they begin to shoot, to rub off all danglers as be-

fore, and train the ftrong thoots in their proper places, which this year may be supposed to be two from each shoot of last year's wood; but if they attempt to produce two shoots from one eye, the weakest of them must be rubbe off, for there should never be mo one allowed to come out of each eye If any of them produce fruit, as many times they will the third year, you fimes they will the third year, you should not stop them so soon as it generally practiced upon the bearing shoots of old vines, but permit them to shoot sorward till a month after Midfummer, at which time you may pinch off the tops of the shoots; for if this were done too soon, it would spoil the buds for the next year. buds for the next year's wood, which in young vines must be more careful preserved than on older plants, because there are no other to be laid in for supply of wood, as is commonly practifed on old vines

tifed on old vines.

During the fummer you must cor stantly go over your vines, and displacall weak lateral shoots as they are prouced, and carefully keep the ground lear from weeds, as was before ected, that the moots may tipen a which is a material thing to be ved in most forts of fruit-trees, but especially in vines, which seldom pro-duce any fruit from immature bran-ches. These things being duly observed, are all that is necessary in the management of young vines.

Spanish Arber Vanz, Bindweed.

White VANE. Briony.

VINEGAR, [Acetum.] An acid penetrating liquor, prepared from wine, cyder, beer, &c. of confiderable use both as a medicine and sauce,

The process of surning vegetable matters to vinegar, is thus delivered by Dr. Shaw: Take the skins of raising, after they have been used in making wine, and pour three or four times their own quantity of bailing water upon them so as to make upon them, so as to make a thin aq ous mixture. Then set the contain cask, loosely covered, in a warmer pl. than is used for vinous fermentation and the liquor in a few weeks time will become a clear and found vinegar; which being drawn off from its fedi-ment, and preferved in another cafe, well stopped down, will continue perfect, and fit for use.
Z z 2

This experiment shews us a cheap and ready way of making vinegar from refuse materials; such as the husks of grapes, decayed raisins, the less of wine, grounds of ale, beer, &c. which are frequently thrown away as ufelefs, Thus, in many wine countries, the mare, rape, or dry preffing of grapes, are thrown in heaps, and fuffered to putrify unregarded, though capable of affording as good vinegar as the wine refelf. In some places they bury copmake verdigreafe; but this practice feems chiefly confined to the fouthern parts of France, Our present experianotherule; and the direction extends to all the matters that have once undergone, or are fit to undergo a vinous fermentation, for that all fuch matters will afford vinegar. Thus all our fummer-fruits in England, even black-berries; all the refuse washings of a fugar-house, cyder-pressings, or the like, will make vinegar, by means of water, the open air, and warmth. The whole process, whereby this

The whole process, whereby this change is effected, deferves to be attentively confidered, and first, the liquor to be thus changed, being kept warmer than in vinous fermentation, it begins in a few days to grow thick or tirbid; and without throwing up bubbles, or making any confiderable tumult, as happens in vinous fermentation, deposits a copious fediment.

The effect of this separation begins to appear first on the surface of the liquor, which gathers a white skin, that daily increases in thickness, till at length it becomes like leather; and now, if continued longer in this state, the skin turns blue, or green, and would at last grow solid, and putrify; therefore, in keeping down this skin as it grows, and thrusting it gently down to the bottom of the vessel, consists much of the art of vinegar-making, especially from malt.

Method of making Cyder Vinegar. The cyder (the meanest of which will serve the purpose) is first to be drawn off fine into another vessel, and a quantity of must; or pouz of apples, to be added; the whole is to be set in the sun, if there be a conveniency for the purpose; and at a week or nine days end, it may be drawn off.

Method of making Beer Vinegar. Take a middling fort of beer, indifferently well hopped; into which, when it has worked well, and is grown fine, put fome rape, or hulk of grapes, ufually brought home for that purpole; main them together in a tub, then, letting the rape fettle, draw off the liquid part, put it into a cafk, and fet it in the fun as hot as may be (the bung only covered with a tile or flate-ftone) and in about thirty or forty days, it will become a good vinegar, and may pass in use as well as that made of wine, if it be refined, and kept from turning

Or thus: to every gallon of springwater, add three pounds of Malagaraisins; which put into an earthen jar, and place them where they may have the hottest sun from May till Michaelmas; then preffing all well, tun the liquor up in a very strong iron-hooped vessel, to prevent its burshing; it will appear very thick and muddy, when newly pressed; but will refine in the vessel, and be as clear as wine.

Thus let it remain untouched for three months, before it be drawn off, and it will prove excellent vinegar,

and it will prove excellent vinegar,

Method of making Wine Vinegar. Any
fort of vinous liquor, being mixed
with its own faces, flowers, or ferment, and its tartar, first reduced to
powder; or else with the acid and auflere stalks of the vegetable from
whence the wine was obtained, which
hold a large proportion of tartar; and
the whole being kept frequently stirring in a verset which has formerly held
vinegar, or set in a warm place sull of
the steams of the same, will begin to
ferment anew, conceive heat, grow sour
by degrees, and soon turn into vinegar.

by degrees, and foon turn into vinegar.

The remote subjects of acctous fermentation are the same with those of vinous; but the immediate subjects of it are all kinds of vegetable juices, after they have once undergone that fermentation which reduces them to wine; for it is absolutely impossible to make vinegar of must, the crude juice of grapes, or other ripe fruits, without the previous affistance of vinous fermentation.

The proper ferments for this operation, whereby vinegar is prepared, are, 1. The faces of all acid wines. 2. The leys of vinegar, 3. Pulverifed tartar; tartar; especially that of Rhenish wine, or the cream, or chrystals thereof. Vinegar itself, 5. A wooden vessel well drenched with vinegar, or one that has been long employed to contain it, 6. Wine that has often been mixed with its own feces. 7. The twigs of vines, and the stalks of grapes, currants, cherries, and other vegetables of an acid austere taste. 8. ker's leaven, after it is turned acid, q. All manner of ferments, compounded

of those already mentioned.

The French use a method of ma-king vinegar different from that above described. They take two large oaken veffels, the larger the better, open at top; in each of which they place a wooden grate, within a foot of the bottom; upon these grates they first lay twigs, or cuttings of vines, and afterwards the flaks of the bunches without the grapes themselves, or their stones; till the whole pile reaches within a foot of the brim of the vessels; then they fill one of these vessels with wine to the very top, and half fill the other; and with liquor drawn out of the full veffel, fill up that which was only half full before; daily repeating the fame operation, and pouring the liquor back from one veffel into another; fo that each of them is full, and half full,

When this process has been continued for two or three days, a degree of heat will arife in the veffel, which is then but half full, and increase for feveral days fucceffively, without any appearance of the like in the veffel which happens to be full, during those days; the liquor whereof will still remain cool; and as foon as the heat cea-fes in the veffel that is half full, the vinegar is prepared: which, in the fummer, happens on the fourteenth or fifteenth day from the beginning; but in the winter, the fermentation proceeds much flower, fo that they are obliged to forward it by artificial warmth, or the use of stoves.

When the weather is exceeding hot, the liquor ought to be poured off from the full vessel into the other twice a day; otherwise the liquor will be over-heated, and the fermentation prove too ftrong; whence the fpirituous parts will fly away, and leave a vapid wine, instead of a vinegar behind.

The full veffel is always to be left open at the top, but the mouth of the other must be closed with a cover of wood, in order the better to keep down and fix the spirit in the body of the liquor; otherwife, it might eafily fly off in the heat of fermentation. The veffel that is only half full feems to grow hot rather than the other, because it contains a much greater quantity of the vine-twigs and stalks, than that, in proportion to the liquor; above which, the pile rifing to a confiderable height, conceives heat the more, and fo conveys it to the wine below.

Vinegar is a medicine of excellent use in all kinds of inflammatory and putrid disorders, either internal or ex-ternal; in ardent bilious severs, pestilential and other malignant distempers, it is recommended by Boerhaave as one of the most certain sudorifics. ness, fainting, vomiting, hysterical and hypochondriacal complaints have also been frequently relieved by vinegar applied to the mouth or nose, or received into the stomach. Distilled vinegar has the same virtues, only in a stronger

degree.

There are also medicated vinegars; as vinegar of antimony, of elder, h-tharge, rofes, fquills, treacle, &c. which derive their chief virtues from the vi-

vineyard. A plantation of vines without the affistance of walls,

VINOUS. Something that relates to wine, or that hath the tafte and fmell of it.

VINTAGE. A crop of grapes, or the produce of a vineyard each

VIOLET, [Visla.] This is often found wild in hedges and shady places, and showers in March; the shops are generally supplied from the gardens. In our markets we meet with the flowers of a different species; these may be diftinguished from the foregoing by their being larger, of a pale colour, and of no smell. The officinal flowers have a very pleafant fmell, and a deep purplish blue colour, denomina-ted from them violet. They impare their colour and flavour to aqueous liquors: a fyrup made from this infufion has long maintained a place in the shops, and proves an agreeable and uleful laxative for children.

Dame's VIOLET. See DAME's

Bulbous VIOLET. Snowdrop.

Dog's Tooth VIOLET. See Dog's Toot H.

Corn VIOLET. See CORN VIOLET. VIPER. The name of a wellknown ferpent, common in many parts of England.

The bathing the part bit by a viper with olive oil, is faid to effectually prevent the fatal confequences that

would otherwise attend it.

VIPER'S BUCLOSS, [Echium.] This plant grows naturally on chalky lands in most parts of England. There are feveral species brought into the English gardens, from Germany, France, Portogal, and other countries, some of which are annual, and some biennial plants. They are propagated by feeds.

VIPER'S GRASS, [Scorzonera.] This plant is cultivated in the English gardens for food and physic; it grows naturally in Spain. The root is carrot-fnaped, about the thickness of a fin-ger, covered with a dark brown skin, as white within, and has a milky juice; the lower leaves are long, ending with a long acute point; they are waved and finuated at their edges. The fialk rifes three feet high, is smooth, branch-ing at the top, and garnished with a few parrow leaves, whose base half embrace the stalk. The flowers terminate the stalks in scaly empalements, composed of many narrow, tongue-shaped hermaphrodite florers, lying imbricatim over each other like the scales on fish; they are of a bright yellow colour. After these are decayed, the germen which fits in the common empalement turns to oblong cornered feeds, having a roundish ball of feathery down at the top. There are fe-veral species kept in the gardens, all propagated by seeds.

VIRGIN'S BOWER. See CLIM-

VIRGINIAN SILK, [Peripleca.]
This plant grows naturally in Syria, but is hardy enough to thrive in the open air in England. It hath twining thrubby stalks, covered with a dark bark, which twist round any neighbouring support, and will rile more than forty feet high, fending out slen-der branches from the fides, which twine round each other, and are garnished with oval spear-shaped leaves near four inches long, and two broad in the middle, of a lucid green on their upper fide, but pale on their under,

flanding by pairs upon thort footstalks.

This is hardy enough to thrive in this country with a little protection from the frost of the winter. Another fort brought from Vera Cruz requires the affiftance of a warm flove.

VIRGINIAN ACACIA. See ACA-

VITRIOL. A faline chrystalline concrete, composed of metal, and an acid, fimilar to those of fulphur and allum. There are but three metallic bodies, which this acid is capable of perfectly diffolving or being united with into a chrystalline appearance, zinc, copper, and iron; with the first it forms a white, with the second a blue, and with the third a green salt.

White VITRIOL. Found in the mines of Goffar; fometimes in transparent pieces, but more commonly in form of white efflorescences, which are diffolyed in water, and afterwards reduced by evaporation and chrystalli-

zation into large maffes.

Blue VITRIOL. Greatest part of the blue vitriol at prefent met within the shops, is faid to be artificially pre-pared by uniting copper with the vitriolic acid.

Green VITRIOL. This is prepared in large quantity at Deptford, by dif-folving iron in the acid liquor, which runs from certain sulphureous pyrites exposed for a length of time.

ULIGINOUS. An appellation given to a moift, moorifi, and fenny foil:

UMBEL. The extremity of a falk or branch of a plant, divided into feveral peduncles, or rays, beginning from the fame point, and opening in fuch a manner, as to form an inverted

UMBELLIFEROUS Plants. Those whose flowers are produced in an umbel, on the top of the stalks, somewhat refembling an umbrella. Of this kind are the fennel, partley, parfnip, carret,

UNDERWOOD. Coppice, or any

wood not accounted timber,

VOOR. Fallow land. URE. The udder of a cow, fleep, or other animal,

URITH.

URITH. Etherings, or windings of hedres.

URRY. A fort of blue or black clay, lying near a vein of coal,

URINE. A ferous and faline matter separated from the blood of animals, and emitted by the canal of the urethra.

It is of excellent use as a manure, when deprived of its hot fiery particles by time, which will so alter its nature as to render it an extraordinary fertilizer of every kind of foil. Columella certifies that old urine is excellent for the roots of trees, Mr. Hartlib com mends the Dutch for preferving the urine of cows as carefully as they do the dung, to enrich their lands; and inflances a woman he knew near Canterbury, who faved in a pail all the urine the could, and when the pail was full, sprinkled it on her meadow, the grafs of which looked yellow at but afterwards grew furprifingly. Similar to this is what Mr. Branley relates, as of his own knowledge, Human uting was thrown into a little pit constantly every day, for three of four years. Two years after, some earth was taken out of this pit, and mixed with twice as much other earth, to fill up a hollow place in a grass walk. The turf which was laid upon this spot grew so largely and vigorously, besides being much greener than the rest, that by the best computation he could make, its grass, in a month's time, was above sour times as much in quantity as that of any other spot of the same size, though the whole walk was laid on very rich ground. The author of the English Improver is therefore very right in saying, that human urine is of greater worth, and will fatten land more, than is generally imagined by our farmers, whom he advises to take all opportunities of present their ground, as carefully as is done in Holland.

USTILAGO. The same with burnt grain.

UTENSIL. A domestic moveable of any kind.

W.

WAGGON, a vehicle or carriage, of which there are various forms, accommodated to the different uses they are intended for. See the article WHEEL.

walf, an effray, which for want of the owner's appearance after it has been cried and published in the neighbouring markets, is forfeited to the

lord of the manor.

WAKE ROBIN. See ARUM.

WALKS are made either of gravel, fand, or grass; these three forts of walks are the most common in England; but where gravel or sand cannot be procured, they are sometimes laid with powdered coal, sea-coal asses, and sometimes of powdered brick, but these are rarely used, when either gravel or sand can be procured; however, where sea-coal asses can be had, it is preferable to the powdered coal or

bricks, because they bind very hard, and never thick to the feet in froity weather, which is a good quality, but the darkness of its colour has been an objection to the use of it in gardens; however, for wilderness-walks we think it is preferable to most other materials; but we shall proceed to give directions for the making of the several forts of walks, and first of the gravel-walks.

In order to the laying of walks in the walks and the state of the several sorts of walks.

In order to the laying of walks in gardens, when they are marked out, the earth should be taken away to a certain depth, that the bottom of them may be filled with some lime-rubbish, or coarse gravel, sint stones, or other rocky materials, which will be serviceable to prevent weeds from growing through the gravel, and also to keep away worm-easts. This bottom should be laid ten inches or a foot thick, over which the coat of gravel should be fix or eight inches; which gravel should

be fine, but yet not ikreened, because that spoils it. This should be laid on a heap, rounding, that the larger rough stones may run down on the fides, which being every now and then raked off, the gravel by that means will be

fufficiently fine.

After the gravel has been laid to the thickness above mentioned, then the walks must be exactly levelled, and raked true from all great drips, as well as little holes. By this means most of the stones of the walks will be raked under your feet, which should rather be gently sprinkled back again, over the laft length that is raked, than buried, (as is the practice of many gardeners) for by this means the walk will lie much harder, and the coarsest ftones will very much contribute to its firmness.

There is also a great fault committed frequently, in laying walks too round, and some to that degree, that they cannot be walked on with that ease and

pleafure that ought to be.

The common allowance for a gravelwalk of five feet breadth, is an inch rife in the crown; fo that if a walk be twenty feet wide, according to this proportion, it will be four inches higher in the middle than on each fide, and a walk of twenty-five feet will be five inches, one of thirty feet fix inches, and fo on,

When a walk has been thus carefully laid, trodden down, and raked, or rather, after every length or part of it, (which commonly is about fifteen feet each) then it should be rolled well both in length, and also cross-ways. The person who rolls it should wear thoes with flat heels, that he may not make holes in the walks, for when thefe are once made in a new walk, it will not be eafy to roll them out again.

In order to lay gravel-walks firm, it will be necessary to give them three or four water-rollings, that is, they must be rolled when it rains so very fast, that the walks fwim with water; this will cause the gravel to bind, so that when the walks come to be dry, they will be

as hard as terrace,

Iron-mould gravel is accounted the best for binding, or gravel with a little binding loam in it; which latter, tho' it be apt to flick to the heels of shoes

in wet weather, yet nothing binds better in dry weather.

When the gravel is over fandy, fome fharp loam is frequently mixed with it, which, if they be caft together in heaps, and well mixed, will bind like a rock; whereas, loofe gravel is as uncomfortable and uneafy to walk on as any other fault in a walk can render it,

The beft gravel for walks is fuch as abounds with fmooth pebbles (as is that dug at Blackheath) which being mixed with a due proportion of loam, will bind like a rock, and is never injured by wet or dry weather, and the pebbles being fmooth, are not fo liable to be turned up and loofened by the feet in walking, as are those which are angular and rough; for where walks are laid with such gravel as is full of irregular stones, they appear unsightly in a day's time after rolling, because the stones will rife upon the furface whenever they are walked upon, but the smooth pebbles will remain handsome two or three days without rolling.

Gravel-walks are not only very necessary near the house, but there should always be one carried quite round the garden, because, being soon dry after rain, they are proper for walking en in all feasons; but then these should be narrow, and those adjoining to the house ought to be large and magnificent, proportionable to the grandeur of the house and garden. The prinof the house and garden. The principal of these walks should be elevated, and carried parallel with the house, so as to form a terrace; this should extend itself each way, in proportion to the width of the garden; fo that from this there may be a communication with the fide-walks, without going on the grass, that there may be a dry walk continued quite through the gardens; but there is not a more ridiculous fight, than that of a strait gravel-walk leading to the front of a house, interfeeting the grafs, fo as to make it appear like the stiff formal grafs-plats frequently made in little court-yards by persons of low taste,

Grass-walks in gardens were formerly in great efteem, and looked upon as necessary ornaments to a garden; but of late years they have justly been banished by every person of true taste.

Having given directions for the ma-

king of gravel-walks, we come next to treat of fand-walks, which are now very frequently made in gardens, as being less expensive in the making, and also in the keeping, than the former; and in very irregular gardens, which are fuch as most persons esteem, this is a very great article; for as the greatest part of the walks which are made in gardens are carried about in an irregular manner, it would be very difficult to keep them handfome if they were laid with gravel, especially where they are shaded by trees; for the dripping of the water from their branches in hard rains, is apt to wash the gravel in holes, and render the walks very unfightly; and when these wood-walks are of grafs, they do not appear fightly, nor are they very proper to be walked on; for after rain they continue fo long damp as to render them unfit for use, and the grass generally grows spiry and weak for want of air, and by the dropping of the trees, will by degrees be destroyed; therefore it is much better to lay these walks with fand, which will be dry and wholfome; and whenever they appear mosfy, or any weeds begin to grow on them, if they are scuffled over with a Dutch hoe in dry weather, and then raked (mooth, it will deftroy the weeds and moss, and make the walks appear as fresh and handsome as if they had been new laid,

In the modern way of laying out gardens the walks are carried through woods and plantations, fo that thefe are shady and convenient for walking in the middle of the day. These are isfually carried about, winding as much as the ground will admit of, so as to leave a fufficient thickness of wood to make the walks private; and that the persons who are walking in one part of them may not be seen by those who

are walking in any of the other parts.
Where these walks are contrived withjudgment, asmall extent of ground will admit of a great many turns, fo that a person may walk some miles in a small garden. But these turns should be made as natural as possible, so as not to appear too much like a work of art, which will never please so long as the former.

The breadth of these walks must be roportioned to the fize of the ground; which in a large extent may be eight with firong gales of wind, and in dry

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or ten feet wide, but in small gardens five or fix feet will be sufficient. As the walks are designed to wind as much as the ground will allow, fo this width will be fufficient; because the wider they are, the greater must be the turns, otherwise the walks will not be private for any distance. Besides, as it will be proper to line the fides of these walks with honeysuckles, sweet-briar, rofes, and many other fweet-flowering at least five or fix feet from the walk. to allow room for thefe,

When the ground is traced out in the manner as the walks are defigned, the earth should be taken out of the walks and laid in the quarters. The: depth of this must be proportioned to the nature of the foil, for where the ground is dry, the walks need not be elevated much above the quarters, fothe earth should be taken out four or five inches deep in such places; but where the ground is wet, the bettom of the walks need not be more than two inches below the furface; that the walks may be raifed to high as to throw off the wet into the quarters, which will render them more dry and healthy to walk on.

After the earth is taken out to the intended depth, the bottom of the walks should be laid with rubbid coarfe gravel, or whatever of the like nature can be most readily procured, This should be four, five, or fix inches thick, and beaten down as close as possible, to prevent the worms from working through it, then the fand should be laid upon this about 3 inches thick, and after treading it down as close as possible, it should be raked over to level and smooth the surface. In doing this, the whole hould be laid a little rounding to throw off the wet, but there will be no necessity of observing any exactness therein; for as the whole ground is to have as little appearance of art as possible, the rounding of thefe walks should be as natural, and only fo contrived as that the water may

have free passage from them.

The fand with which these walks are laid should be such as will bind, therwife it will be very troubleforme to on them in dry weather; for if the fand

weather will dide from under the feet. If, after these walks are laid, they are well rolled two or three times, it will fettle them, and cause them to be firm. If the fand is too much inclinable to loam, it will also be attended with as ill confequence as that which is too loofe, for this will flick to the feet after every rain; fo that where fand can be obtained of a middle nature, it should

always be preferred.

In some countries where fand cannot be easily procured, these walks may be laid with sea-shells well pounded, fo as to reduce them to a powder, which will bind extremely well, provided they are rolled now and then; but where none of these can be easily procured, fea-coal aftes, or whatever elfe can be gotten, which will bind and be dry to the feet, may be used for this purpose; and where any of these can only be had in small quantities, the walks should have a greater share of subbith laid in their bottom, and these foread thinly over them; and in most places rubbish, rough stones, or coarse gravel, may be easily procured.

WALLS, are absolutely necessary in gardens, for the ripening of all fuch fruits as are too delicate to be per-fected in this country without fuch affistance, These are built with different materials; in some countries they are built of ftone, in others with brick, ac-cording as the materials can be pro-cured best and cheapest.

Of all materials proper for building walls for fruit-trees, brick is the best, in that it is not only the handsomest, but the warmest and kindest for the ripening of fruit; besides that, it affords the best conveniency of nailing, for imatter nails will ferve in them than in stone walls, especially if the joints are not too large; and brick walls with copings of free-stone, and fione pilasters or columns at proper diffances, to separate the trees, and break off the force of the winds, make not only the most beautiful, but the most durable walls.

In some parts of England there are walls built both of brick and ftone, which have been very commodious. The bricks of fome places are not of themfelves fubitantial enough for walls, flore; and therefore forme persons, that fruit upon the trees of the circular

they might have walls both substantial and wholesome, have built double ones. the outfide being of stone and the in-fide brick, or a stone wall lined with brick; but when thefe are built, there must be great care taken to bind the bricks well into the stone, otherwise they are very apt to separate one from the other, especially when hard frost comes after much wet; which fwells the mortar, and frequently throws down the bricks, when the walls are only faced with them, and not well

tied into the stone.

Where the walls are built entirely of stone, there should be trellisses fixed up against them, for the more convenient fastening the branches of the trees; the timbers of these espaliers need not be more than an inch and a half thick, and about two inches and a half broad; thefe flould be fixed cross each other, at about four inches diftance: for if they are at a much greater distance, it will be difficult to tasten the shoots of the trees properly. As this trellis will be laid close to the wall, the branches of the trees will lie about two inches from the wall, in which position the fruit will ripen better than when it lies close to the wall; fo that there should always be these efpaliers framed against them, which will render these walls very good for fruit-trees, which, without the espaliers, feldom are found to answer the purpole of ripening the fruits well, belides the inconvenience of having no good fastening for the branches of the trees.

There have been several trials made of walls built in different forms; fome of them having been built semicircular, others in angles of various forms, and projecting more towards the north, to fkreen off the cold winds; but there has not been any method as yet, which has succeeded near so well, as that of making the walls strait and building

them upright.

The fairest trial Mr. Miller fays, be has feen made of circular walls was at Good wood in Suffex, the feat of the Duke of Richmond, where in the middle of two fouth walls, there were two there were the fame forts of fruit-trees planted, as against the frait parts of

part of the walls which came to maturity, nor were the trees of long continuance, being blighted every fpring, and in a few years were totally de-ftroyed; and when the branches of those trees which grew upon the strait part of the walls, had extended themfelves fo far as to admit of their being led into the circular parts of the walls, they were constantly blighted & killed. When the trees which had been

planted in the circular parts were destroyed, the walls were filled with vines; but the grapes of the fame fort were full a month later than those growing against the strait part of walls; so that they rarely sipened, which occasioned their being rooted out, and figs were afterwards planted, but the fruit of these succeeded little better; nor can it be supposed that any trees or plants will thrive so well in these circles where there is a con-stant draught of air round them, which renders the fituation much colder than the open free air.

WALL Flower. See GILLIFLOWER.
WALLWORT. Dwarf Elder.
WALNUT, [Juglant.] The species are, 1. The common walnut. cies are, 1. Of the common walnut there are feveral varieties, which are diffinguished by the following titles: the large walnut, the thin-shelled walnut, the French walnut, the late-ripe walnut, and the double walnut; but these do all of them vary when raised by the seed, so that the nuts from the same will produce plants whole fruit tree will differ; there'o'e there can be no dependance upon the trees which are raifed from nuts, till they have produced fruit; fo that those persons who plant the trees for their fruit, should make choice of them in the nurferies when they have their fruit upon them, otherwise they may be deceived, by having such as they would not choose.

2. Black Virginia Walnut. This

grows to a large fize in North-America. The leaves are compoled of five or fix pair of spear shawed or fix pair of spear-shaped lobes, which end in acute points, and are fawed on their edges; the lower pair of lobes are the least, the other gradu-ally increase in their fize to the top, where the pair at the top, and the fin-gle lobe which terminates the leaf, are fmaller; these leaves, when bruised,

MARF

emit a firong aromatic flavour, as do also the outer cover of the nuts, which are rough, and rounder than those of the common walnut. The field of the nut is very hard and thick, and the kernel finall, but very fweet. 3. Black Virginia Walnut, with an

oblong fruit very deeply furrowed. This fort grows naturally in North-America, where the trees grow to a large fize. The leaves are composed of feven or eight pair of long heart shaped lobes, broad at their base, wh they are divided into two round ears, but terminate in acute points; the are fougher and of a deeper green than those of the second fort, and have no-thing of the aromatic scent which they have. The fruit is very long; the shell is deeply surrowed, and very hard; the

kernel is small, but well flavoured.

4. White Virginia Walnut, calle
Hickery Nut. This is very commo in most parts of North-America, where it is called Hickery Nut. The leaves are composed of two or three pair of oblong lobes, terminated by an odd one; these are of a light green, and sawed on their edges; the lower pair of lobes are the smallest, and the upper the largest. The fruit is shaped like the common walnut; but the shell is

the common walnut; but the shell is not surrowed, and is of a light colour, 5. White Walnut, with a smaller fruit, and a smooth bark. This fort is not so large as the last. The leaves are composed of two pair of lobes, terminated by an odd one; these are narrow at their base, but broad and rounded at their ends; they are saved on their edges, and are of a light reserved. on their edges, and are of a light green. The nuts are fmall, have a fmooth thell, and are very hard and white,

6. White Walnur, with an oval com-pressed fruit, a sweet kernel, and a scaly bark, commonly called Shag-bark in America. This kind grews naturally in North-America, where it rises to a in North-America, where it riles to a middling stature. The leaves are composed of three pair of smooth spear-shaped lobes, of a dark green colour, sawed on their edges, and ending in acute points. The fruit is oval, the shell white, hard, and smooth, the kernel small, but very sweet. The young shoots are covered with a very smooth brownish back host the state. smooth brownish bark, but the stems and older branches have a rough fealy bark, whence it is called fhag-bark.

Aaa 2

The walnut, in the Linnman lystem, belongs to the class and order Monoccia andria. The flowers begin to open about the middle of April, and are in full blow by the middle of May, before which time the leaves are fully dif-

played.
Their trees are propagated by planting their nuts, which feldom produce the fame fort of fruit as fown; fo that the only way to have the defired fort is to fow the nuts of the best kinds; and if this is done in a nurlery, the trees should be transplanted out when trees should be transplanted out when they have had three or four years growth, to the place where they are designed to remain; for these trees do not bear transplanting when they are of a large size, therefore there should be a good number of trees planted, which need not be put at more than fix feet apart, which will be diffance enough for them to grow till they produce fruit; when those, whose fruit are of the defired kind, may remain, and the others cut up, to allow them room to

But as many people do not care to wait to long for the fruit, the next best method is to make choice of some young trees in the nurseries, when they have their fruit upon them. But though these trees will grow and bear fruit, yet they will never be so large or long-lived, as those which are

planted young.

All the forts of walnut which are intended for timber, should be fown in the places where they are to remain; for the roots of these trees always incline downward, which being flopped cline downward, which being flopped or broken, prevent their afpiring upward, so that they afterwards divariate into branches, and become low spreading trees; but such as are propagated for fruit, are greatly mended by transplanting; for hereby they are rendered more fruitful, and their fruit is generally larger and fairet; it being a common observation, that downright roots greatly encourage the luxuriant growth of timber in all forts of trees; but fuch trees as have their roots (preading hear the furface of the ground, al-ways produce the greatest quantity and best-flavoured fruit.

In transplanting these trees, should observe never to prune either their roots or large branches, both

which operations are very injurious to them; nor should you be too busy in lopping or pruning the branches of these trees when grown to a large fize, for it often causes them to decay; but when there is a necessity for cutting any of their branches off, it should be done early in September, (for at that feafon the trees are not so subject to bleed) that the wound may heal over before the cold increases; the branches should always be cut off quite close to the trunk, otherwise the stump which is left will decay, and rot the body of the tree.

The best season for transplanting thefe trees is as foon as the leaves begin to decay, at which time if they are carefully taken up, and their branches preserved entire, there will be little

danger of their fucceeding,

The distance these trees should be placed, ought not to be less than forty feet, especially if regard be had to their fruit; though when they are only de-figned for timber, if they stand nearer, it promotes their upright growth. The black Virginia walnut is much more inclinable to grow upright than the common fort, and the wood is ge-nerally of a more beautiful grain. WANG-TOOTH, a jaw tooth.

WANT, a mole. See Mole. WANTY, a broad girth of leather, by which the load is bound upon a

horfe.

WAPENTAKE, the same with what is called a hundred, and is the term generally used in the northern counties beyond the Trent.

WARBLES, fmall lard tumours on the faddle part of a horse's back, occasioned by the heat of the saddle in travelling, or its uneafy fituation

A hot greafy dish-clout, at first frequently applied, will fometimes re-move them. Camphorated spirits of wine are also very effectual for this purpose to disperse them, especially if a little spirit of sal ammoniac be added to the camphorated spirit. If there be a necessity for working the horse, care should be taken to have the saddle

nicely chambered.

WARREN, a franchife, or place privileged, either by prescription or grant from the king, to keep beafts and fowl of warren in; as rabbits, hares,

partridges, &c.

WARP.

WARP, miscarry, slink her calf.
WARTWORT. Euphorbium.
WASTE, a name given to such lands as are in no man's possession,

but lie common.

WATER is one of the most confiderable requifites belonging to a gar-den; if a garden be without it, it brings a certain mortality upon whatfoever is planted. By waterings the great droughts in fummer are allayed, which would infallibly burn up most plants; belides as to noble feats, the beauty that water will add, in mak-

ing calcades.

Water not only acts as a vehicle to the nourishment of plants, but carries with it many particles which enrich the foil; especially after heavy rains. It then deposits a sertiling sediment, which turns the mould to a blackith colour. Watering likewife promotes the putrefaction of every vegetable and animal Substance found in the earth, and thereby contributes greatly to me-

Plants which grow on dry pastures contain richer and more nourishing juices, than those which grow in moult places. Care should therefore be ta-ken, that the quantity of moissure brought upon the pasture, be only such Care should therefore be taas shall give vigour to the plants, with-

out over-charging their veffels.

Extreme heat should also be avoided in watering; because heat draws the moisture too hastily up into the plant, which is thereby filled with a watery juice, and rendered of fo tender a tex ture, as easily to be killed afterwards

by drought or cold,

Water CALAMINT, Horfemint. WATER-CRESS. See Water-Crefs. WATER DROPWORT. See Water DROPWORT.

Water Flac. [Gladiolus Luteus.] Yellow water-fing, Iris, baftard acorus, or water flower de-luce. This plant grows common by the brinks of rivers and in other watery places. The root has a very acrid tafte, and proves when fresh a strong cathartic: its expressed juice, given to the quantity of eighty drops every hour of two, and occasionally increased, has occasioned a plentiful evacuation, after jalap, gamboge, &c. had proved ineffectual. By drying, it lofes its acrimony and purgative virtue. The pulvis ari of our dispensatory contains about one-fifth of the dry root.

Water GERMANDER. See Water GERMANDER.

Water HYMP AGRIMONY, See Water AGRIMONY.

Water HongHound. Ses Water HOREHOUND.

Water LILY. See Water Lily.

Water PARSNEY. Skirret.
Water PEPPER. Biting Arimart,
WATTLE, A kind of hurdle for WATTLE. A kind of hurdle for-med with split wood, and used for making folds for steep. WAX, or BEES WAX. A sub-flance formed by bees from the farina of flewers. See Byz.

WAY-BREAD. Plantain. WAYFARING TREE. [Libinum.] This tree grows naturally in many parts of Europe and America, and is either propagated from feeds or layers.

WEANEL. An animal newly

WELD. Dyer's Weed. See WoAD WEED. Any plant growing in a field different from what the farmer intended.

WHEAT, [Triticum.] The forts of wheat cultivated in England now, and to answer all purposes, are known to the farmer under the names of red wheat, white wheat, and cone wheat; there are abundance of varieties, but when every thing is confidered, thefe are enough, and diffinction enough to make. We cannot with the greatest precifion, perhaps, point out where red is much found in Bedfordfhire, the white about Taunton, in Somer-fetshire, and the country about London, and the cone in Staffordshire, Herefordfhire, &c.

Whatever diffinctions might have been made of each grain to different forts of land, we believe that each will grow on each, not that cone wheat is fo well adapted to light land as white wheat, or as white wheat is to ftrong

It has been very juftly observed by ancients, as well as moderns, that wheat will grow in almost any part of the world, and that, as it is the plant most necessary to mankind, so it is the most general, and the most fruitful. It thrives not only in temperate climates, but also in very hot and very

cold regions; and, when fown in places where it never grew spontaneously, fucceeds as well as where it has been always common. The fuccess of the crops of wheat in America plainly prove this: and, in Peru and Chili in particular, where this grain was not known till the Europeans introduced it there, it now produces as large crops as in most parts of Europe.

Wheat fhould be fowed in autumn, and always when the ground is moift. In the downs of Hampshire, Wiltshire, and Dorsetshire, farmers begin to sow their wheat in August, if any rain has fallen; and even employ their people to fow one place, while they reap ano-ther, if wet weather interrupts them in the harvest; for if the corn be not forward in autumn, fo as to cover the ground before winter, it feldom does well on those high dry lands, especially if the ensuing spring proves likewise dry. In low strong lands, some hasbandmen think they are in good feafon, if they get their wheat into the ground by the middle of November; nay, it is fometimes Christmas, or even later, before all their wheat is fown. But this late fown wheat, befides being apt to run too much to ftraw, especially if the spring be most, is liable to be thrown out of the ground by frofts.

Some gentlemen have been curious enough to procure their feed wheat from Sigily, and it has succeeded very well as to the growth; but the grain of this species has proved too hard for our

English mills to grind.

The best time for fowing wheat is about the beginning of September, especially if any rain has fallen; a circular content of the earth cumftance fo effential, that if the earth be very dry, the farmer had better stay till friendly showers have moist ned his foil, than put his corn in ground where it will not grow before it has been wet, let the time be ever so long. Mr. Mortimer fays, he has known wheat to be so mustied and spoiled by laying long in the ground before rain has come, that it has never grown at all; to which he adds, that he has likewife feen very good crops grow from feed fown in July. At all events, the hurbandman flouid certainly have his wheat fowing finished by the mid-dle of October. Whoever neglects this, thews in fo doing a want of proper

economy in his affairs, and will have

caule to repent his delay.

Early lowings require less seed than late ones, because the plants then rise better, and acquire strength to refist the winter's cold. More seed should always be allowed for poor lands than for rich, because a greater number of plants will perish on the former. Rich lands, sowed early, require the least

feed of any.

Another circumstance which the hufbandman should carefully attend to in fowing is, that his estimate of feed be formed, not from the capacity of any particular measure, but from the number of grains which that measure will contain; because the grains of some growths of wheat are much lar-ger than those from off other lands, ger than those from off other lands, though of the same species, and perhaps equally good. By not considering this, the ground will of course frequently be sown too thick, or too thin; though we believe, farmers are seldom apt to run into this last extreme. That they too often commit the former error, so manifestly contrary to their interest in every respect, is demonstrated by reaevery respect, is demonstrated by rea-fon, and by daily experience:—but neither of these is sufficient to make them deviate from the heaten track. Instead of the usual allowance of three bushels of feed wheat to an acre of land, repeated trials have shewn that half or two-thirds of that quantity is generally more than sufficient; confe-quently a great deal of corn is actually thrown away; for the expence of pur-change feed, which most skilful hufbandmen generally do, at least every other year, amounts to a considerable article in large farms, and in a whole country, merits the attention of the public, especially in scarce years; befides which, the suture plants, crowded together by being thus fown too thick, and not having a sufficient space allowed them for a fustenance, cannot yield near so fine and plentiful a crop as they would otherwise produce. A fair trial, made with proper care, would soon convince farmers of their error in this respect; for if they but examine a field of corn fown in the common way, they will find few plants with more than two or three stalks, unless by chance, where some of them stand so as to have room to spread.

Thefe will have fix, eight, or ten stalks, and frequently many more; but a field of wheat fown with only a buthel of corn, has been known to be well covered with healthy vigorous plants, each of which has had from fix: to fourteen or more stalks, crowned with long well-nourished ears, full of fine plump grain, of which it has yielded a much greater quantity than any of the neighbouring grounds, fown with the common allowance. If the land be good, and the plants fland at a proper diffance from each other, few of them will produce less than the above number of stalks and ears. But farmers think they shall have no crops if the ground be not covered with the blades of corn by the fpring: whereas if they would have patience to wait till the plants put out all their flems, they would be amply convinced of the contrary. Every one must have observed, in places where foot-paths are made through corn fields, that, by the fides of those paths, where the corn is thin, and has been trodden down in winter and fpring, the plants have stood erect, when most of the corn in the same field has been laid flat upon the ground; and advantage which can arise from no other cause, than that their stalks are stronger from their having more room; for these of the other plants are drawn up tall and slender, by being too close together.

COW WHEAT. See COW WHEAT. Indian WHEAT. See GUINEA Wheat. WHEE or WHEY. A heifer. WHICKEN TREE, Service tree.

WHINS. Furze.

WHISKET.

WHISKET. A bafket.
WHITE-CLOVER. A well known plant, and reckoned the (weeten feed of any of the fown graffes; and it is of most advantage to the farmer, because it is perennial, or lasts a great

number of years on the land.

This plant fends forth roots at every joint, fo that it thickens, and foon makes a thick fward. When land is to be laid down for pasture, the farmer will reap great profit, if, with about four bushels of clean-fifted hayfeed to an acre, he fows eight pounds of this clover, but it is to be remarked, that it is never to be fown with corn.

It may be fown either in spring or autumn; if in fpring, it may be cut

about the latter end of July; if fown in autmun; the crop will be much ear-lier. As foon as ever the hay is off lier. As foon as ever the the land, it should be rolled with a heavy roller. In laying down land heavy roller, it will be proper for with these grasses, it will be proper for the farmer to be very careful that he cleans the land of all forts of weeds; and the hay-feeds are to be fown first immediately after which the clover is to be regularly scattered. After sowing, the land should be lightly harrowed, with a short tined harrow, so bury the feed; and a few days afterif the weather be dry, it should be rolled, to break the clods, and close it.

It will be good husbandry, if, after

the plants are come up, the farmer should fend in some weeders, to pull up all the tall rampant weeds which might injure the crop, for, if they are fuffered to feed, they will foon flock

the land,

It will be proper to take the advan-tage of dry weather, and roll the land three or four times, after the plants have attained fome fize; for the clo ver taking root at every joint, the fward will thereby be greatly thicken'd.

If a farmer knows his own interest, he will fow fome of this white cloverfeed by itself, in order to supply him-felf with what feed he may want, for it is sometimes very dear. The best feafon for fowing is autumn, upon dry lands, about the beginning or middle of September; but in open, cold lands, much exposed, a month sooner is better: all the caution required in this autumnal fowing is to let the land be very well rolled in the month of October, before the frosts come on, and again in March.

WHITE-SCORE. A difease with which sheep are too often affected and by which great numbers of them die... The following medicine has been

often given with faccefs, provided the theep are at the same time removed into a dry pasture,

Take a pint of old verjuice, half a pound of common or bay falt, dried well before the fire, pound ed, and fifted through a fieve. Then mix the verjuice with the falt by degrees; and add half a pint of common gin, and bottle it up for use. When any of your theep are feized with this diforders feparate.

Ceparate them from the flock, and give each of them three large table spoonfuls of the mixture for a dofe, repeating it two days after!

if they are not better.

WHITE-LANDS, Chalky lands.

WILDS, A term used by our farmers to express that part of a plough by which the whole is drawn forward.

WILDERNESS. A kind of grove of large trees, in a spacious garden, in which the walks are made either to interfect each other in angles, or have the appearance of meanders and labyrinths. byrinths.

WHORTLEBERRY. Bilherry. WIDOWWAIL. [Cneorum.] This is a low evergreen thrub, and might

form an agreeable variety in wilderneffes, &c. It is eafily propagated by scattering the feeds.

WILLOW. See SALLOW.

Dutch or Sweet WILLOW. Candle French Willow: See French Willow,

Sweet WILLIAM. See Carnation. WINDFLOWER, See ANEMONE To WINNOW. To clear corn of the chaff.

WITHERS. The part of a horse where the shoulder-bones join at the bottom of the neck and mane,

WITHWIND. Bindweed.

WIN FER Aconite. Hellebore. WINTER Cherry, See Winter Cherry, WINTER Green. See Winter Green, WINTER Crefs, Water-Crefs.

WINTER's BARK. [Cortex Winteranus.] The produce of a tree growing in Jamaica, Barbadoes, &c. called by Sir Hans Sloane periclymenum retium, foliis laurinis, cortice acri aromatico. It was first discovered on the coast of Magellan, by Captain Winter, in the year 1567; the failers then employed the bark as a fpice, and afterwards found it ferviceable in the feurvy; for which purpole it is at prefent also sometimes made use of in diet-drinks. The true winter's bark is not often met with in the shops, canella alba being generally Substituted for it, and by many reckoned to be the fame; there is, nevertheless, a confiderable difference betwirt them in appearance, and a greater in qua-hty; the winter's bark is in larger pieces, of a more cinnamon-colour than the canella; and taftes much warmer and more pungent.

WITCH HAZEL, [Hamamelis,] This plant grows naturally in North-America, from whence the feeds have been brought to Europe, and many of the plants have been raifed in the English gardens, where they are propagated for fale by the nurlery gardeners. It hath a woody flem from two to three feet high, fending out many flender branches, garmified with oval leaves, indented on their edges, having great refemblance to those of the hazel; they fall away in automn, and when the plants are destitute of leaves, the flowers come out in clusters from the joints of the branches; these some-times appear the latter end of October, and often not till December, but are not succeeded by seeds in this country.

As the flowers of this thrub make very little appearance, fo it is only preferved in the gardens of the curious, for the fake of variety.

It is propagated by laying down the young branches in autumn, which will take root in one year, and may then be taken from the old plants, and planted where they are to remain. feeds of this plant always remain a whole year in the ground, fo they should be fown in pots.

WOAD. Weld, or Dyer's Weed. The English plant, called by botanists

Ifatis fativa, vel latifolia.

A light, black, kindly, and rich foil, or a meadow newly broken up, is chofen for the cultivation of Woad; but it must not by any means be sown on stony or skallow land. It thrives well in plains, but still better on the fouth fide of a hill; the effential point is, that the foil be good, and that it have the above-mentioned qualities.

Though the land which is intended

for Woad be never fo good, it must be dunged a year before it is fown with this plant, and be made first to bear a crop of wheat, or of onions, &c. After thefe are taken off, three deep stirrings should be given with the plough, or, which is much better, with the spade: the first sirring should be in November, and the other two in February, March, or April. If the land which is intended for woad lies flat, and has not Rope enough to carry off the wet, channels must be cut of a greater or less fize, according as the ground is more or lefs disposed to retain the water.

In warm climates, Woad is fown fo early as the beginning of April, unlefs the weather chance then to be too cold, in which case this sowing is deferred till the beginning of May; but for countries like ours, where the pring is attended with frosts, particularly in the night, Mr. Miller is certainly right in advising to lay the land up in narrow high ridges just before winter, that the frost may mellow it; to cross plough it in the spring, laying it again in narrow ridges, and between this time and the enfuing month of June to harrow it well twice at different intervals, in order to root up whatever weeds may have appeared; then, in June, to give the ground a third ploughing as deep as the plough will go, making the furrows narrow; after this, to harrow it again when any new weeds are come up; and finally, towards the end of July, or the beginning of August, to plough it for the last time, laying it as fmooth as possible. A good harrowing after this will fit it completely to receive the feeds, which if rain falls foon after their being fown, or if they are steeped in water during the night before their fowing, as Mr. Miller advises, will appear in a fortnight, if the feason be savoura-ble. They should be but lightly co-vered, and should be sowed so thin as that the plants may stand six inches afunder. Some strew pigeon's dung on the land just after having fown it with Woad, and the plants become much the finer for this manure.

When the Woad is grown large e-nough to be diftinguished, it should be carefully cleared of all weeds, for these would hurt it greatly; and at the same time the plants should be thinned wherever they stand too close: with-out this precaution, the Woad would produce but very few leaves, and would remain extremely flinted in its

growth. Woad generally affords two crops in the same year, and sometimes, when the feafon has been favourable, it has yielded even four. The two first are the best, and these are commonly mixed together in the manufacturing of this plant; but the after-crops are always kept feparate; for if thefe are mixed with the other, the whole will be spoiled.

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The first crop should be gathered to wards the end of August, and the last at the end of October, or in the beginning of November: but this laft crop must be got in before the first frosts come on; for the leaves that might be gathered afterwards would not be worth any thing. When the plant is ripe, which is known by its first leaves beginning to dry, all the leaves are cut off by a man who grasps the plant by handfuls, and they are then laid in a heap to wither. Whilft they are in this lituation, they must be sheltered from the fun and rain, and they must be frequently turned, in order that they may heat equally : they are then carried to a mill fomewhat like that which is used for preffing the oil out of linseed, and are there ground till they are reduced into a paste, which is afterwards formed into cakes of about a pound weight, and these are laid to dry in a covered place where neither the fun nor rain can come at them. This paste is dried thus for about a fortnight, that is to fay till it has acquired confiftence enough to be formed into small roundish lumps, by means of little wooden moulds into which it is put for that purpole. fatt as these lumps are taken out of the moulds, they are laid upon wicker hurdles loofely woven, fo as not to touch one another, and in fuch manner that the air may come at every part of them, as is practifed in the drying of flarch. These lumps become very hard, and in this condition it is that they are fold. When they are to be used, they must be steeped a long while in water before they can be broken.

The Woad thus prepared yields an excellent blue dye, very lasting, and with which all the degrees of this colour may be made. It is not long fince this plant was preferred to indigo; afterwards, through a kind of toleration, the dyers were allowed to put a small quantity of indigo into their vats of Woad; but now, that the making and manner of uting indigo have been greatly improved, it is looked upon as a matter of indifference whether that or Woad be used for dy-

WOLFSBANE, [Aconitum.] The P b b

cles, grow naturally on the Alps, and on the mountains of Auftria and Tartary. Most it not all are hortful in a greater or less degree, so care should be taken where they are planted.

Wholesome Wolfshane, [Anthora.]
This plant may be distinguished from the possonous aconites by its leaves being more finely divided, and not at all bright or thining: it grows wild on the Alps. The root has been supposed useful against possons, particularly that ufeful against possons, particularly that of the thora, (whence its name.) Some nevertheless sook upon this pretended antidote itfelf as unfafe,

WOOD. A large plantation of trees, Woodcock Soil. Ground whose foil under the turf is of the colour of a

woodcock, and is not good.

WOODLAND, Ground covered with woods. It is also a term used by the farmers of many counties in England, for a fort of foil, from its constant humidity and dark colour, refembling the foil in woods, which, of whatever na-ture it originally is, will always be made to appear thus from the continual dropping of trees, and the want of a free air and fun, together with the fall of leaves, destroyed and washed to pieces by the wet.

Wound. Abounding with wood.

WOODEINE. See HONEYSUCKLE. WOODEOOF. Petty Madder. WOOD-SAGE. Tree Germander.

WOOD-SORREL. See WOOD Sorrel. WOOL. The covering of theep. Each fleece confifts of wool of feveral qualities and degrees of fineness, which the dealers therein take care to fepa-

The English and French usually separate each fleece into three principal forts, viz. 1. Mother-wool, which is that of the back and neck. 2. The of the tails and legs. 3. That of the breast and under the belly. The English wool most esteemed is, chiefly that about Leominster, Costs-wold, and the Isle of Wight; the Spanish, principally that about Vegovia; and the French, about Berry.

Both wool, and woollen rags, make

an excellent manure. The rags should he chopped finall, about an inch or two fquare, and fcattered on the earth at the fecond ploughing; for being thereby covered, they will begin to rot by feed-time. They imbibe the moif-

ture of dews and rain, retain it long, and, as Dr. Home observes, thereby keep loose foils in a moist state. They coit about four-pence a bufnel at Lon-don, from whence many loads are fent every year to Dunstable (which is 30 miles) where they are laid even on fiff lands, just after the fowing of the corn, allowing to the acre four facks of fix bufhels each.

WORMS, are very prejudicial to corn fields, eating up the roots of the young corn, and deftroying great quan-tities of the crop. Sea-falt is the bek of all things for deftroying them. Sea water is proper to fprinkle on the land where it can be had; where the falt-fprings are, their water will ferve, and were neither are at hand, a little common or bay-falt does as well. Soot will deftroy them in fome lands, but is not to be depended upon, for it does not always fucceed. Some farmers firew on their lands a mixture of chalk and lime; and others trust wholly to their winter-fallowing to do it, if this is done in a wet season, when they come up to the furface of the ground, and fome nails with fharp heads be driven into the bottom of the plough. If the are troublesome in gardens, the refuse brine of falted meat will ferve the purpole, or some walnut leaves steeped in a ciftern of water for a fortnight or three weeks, will give it such a birter-ness that it will be a certain poison to them. A decoction of wood alhes, fprinkled on the ground, will answer the same purpose; and any particular plant may be secured both from worms and snalls by strewing a mixture of lime and ashes about its roots. It is a general caution among the farmers to fow their corn as shallow as they can, where the field is very subject to worms

WORMWOOD, [Abifinition mul-gare.] Common wormwood. The leaves of this fort of wormwood are divided into roundilh fegments, of a dull green colour above, and whitish underneath. It grows wild in several parts of England; about London, large quantities are cultivated for medicinal use: it flowers in June and July, and after having ripened its feeds, dies down to the ground, excepting a tuft of the lower leaves, which generally abides the winter.

Sea Wormwood are much froater than vided into fine filaments, and hoary on those of the common, and hoary on the lower fide; the flalks, either enthe upper fide as well as the lower; tirely or in part, of a purplish hee. It the flalks wild about our falt marflies, and at prefent difficultly procurable in and in several parts about the sea coaffs. In taste and finely, it is weaker and less unpleasant than the common wormwood. The virtues of both are supposed to be of the same kind, and differ than either; the leaves are distinct fine flaments, and hoary on the same representation in the lower fide; the state of a purplish hee. It is a native of the warmer countries, and at present difficultly procurable in this, though as hardy and as easily raised as any of the other force.

Roman wormwood appears to be the most eligible of the three as a stomaposed to be of the same kind, and differ poled to be of the fame kind, and differ

only in degree.

Roman Workswood. This species is very different in appearance from the two foregoing: it is in all its parts

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YARD-LAND. A quantity of land, in fome countries fifteen acres, in fome twenty, and in others twenty-four, thirty, and thirty-four acres. YARROW. Milfoil.

Water YARROW. This plant grows naturally in standing waters in many parts of England; the leaves which are for the most part immerfed in the water, are finely winged and flat, like most of the fea plants, and at the bottom have long fibrous roots, which firike into the mud: the flower-stalks rife five or fix inches above the water; they are naked, and toward the top have two or three whorls of purple flowers, terminated by a fmall cluster of the same. These flowers have the appearance of those of the stock-gilliflower, fo make a pretty appearance on the furface of the water.

YELLOWS. See JAUNDICE.
YEW. [Taxus.] This tree grows
naturally in England, and also in most of the Northern Counties of Europe, and in North-America. If fuffered to grow, it will rife to a good height, with a very large stem. It naturally fends out branches on every fide, which fpread out, and are almost horizontal; these are closely garnished

YEW OF WORLD

toms to be orderly and second year

strongly spent, will endo to:

often a whole year faven:

with narrow, fiff, blunted pointed leaves, of a very dark green. The flowers come out from the fide of the branches in clufters; the male flowers having many stamina, are more confpicuous than the female; thefe for the most part are upon different trees, but sometimes are upon the same tree; they appear the latter end of May, and the berries ripen in autumn.

The Yew tree has been generally cultivated for the pleasure-garden, both to clip into the figures of beast, birds, &c. and also for hedges. ever is pleafed with fuch figures in his garden, can raise no tree more prope for his purpose, as the branches and leaves may be clipped and fashioned into almost any form or shape. But as this method is justly exploded, and as every one who has the least pretenfion to talte must always prefer a tree in its natural growth to those mon-strous figures, the Yew is now chiefly planted for wilderness quarters, as alfo for hedges, for which fervice it is excellently well adapted, as no tree bears clipping fo well.

These trees may be easily propagated by fowing their berries in autumn. as foon Bbb 2

foon as they are ripe, (without clearing them from the pulp which fur-rounds them, as hath been frequently directed) upon a shady bed of fresh undunged soil, covering them over about half an inch thick with the same

In the spring the bed, must be carefully cleared from weeds, and if the feason proves dry, it will be proper to refresh the bed with water now and then, which will promote the growth of the feeds, many of which will come up the fame fpring, but others will remain in the ground until autumn or the spring following; but where the feeds are preferved above ground till fpring before they are fown, the plants never come up till the year after; fo that by fowing the feeds as foon as they are ripe, there is often a whole year faved.

These plants, when they come up, should be constantly cleared from weds, which, if permitted to grow amongst them, will cause their bottoms to be naked, and frequently deftroy the plants when they continue

long undifturbed.

to an (the main plants) rother higher tending in it

Bergermon with a od dien of

In this bed the plants may remain two years; after which, in autumn, there should be a spot of fresh undunged foil prepared, into which they fhould be remov'd the beginning of October, planting them in beds about four or five feet wide, in rows about a foot afunder, and the fame distance from each other in the rows, observing to lay a little mulch upon the furface of the ground about their roots, as alfo to water them in dry weather until they have taken root; after which they will require no farther care, but to keep them clear from weeds in fummer, and to trim them according to the purpose for which they are designed.

In these beds they may remain two or three years, according as they have grown, when they flouid again be removed into a nursery, placing them in rows at three feet distance, and the plants eighteen inches afunder in the rows; observe to do it in autumn, as was before directed, and continue to trim them in the fummer feafon, according to the design for which they were intended; and after they have continued three or four years in this nurfery; they may be transplanted where they are to remain; always ob-ferving to remove them in autumn where the ground is very dry, but on cold moist land it is better in the fpring.

Thefe trees, though of flow growth, do fometimes arrive at a confiderable fize. Mr. Pennant mentions one in Fontingal church-yard, in the Highlands of Scotland, whose ruins meafured fifty-fix feet and a half in cir-

cumference.

Of the Yew there is a variety with fhort leaves, which appear very ornamental in plantations. There is also another with striped leaves of great value amongst the variegated tribes. These are increased by layers, but the striped fort must be planted upon a barren soil, otherwise it will become plain.

YEOMAN. The first, or highest degree of the plebeians of England. The yeomen are properly freeholders, who cultivate their own lands.

YOAK, or YOKE. A frame of wood, fitted over the necks of oxen, whereby they are coupled together,

and harnessed to the plough.

YOAK of Land. The quantity of land which a yoak of oxen might

King that he Sear your of the more

plough in a day.

